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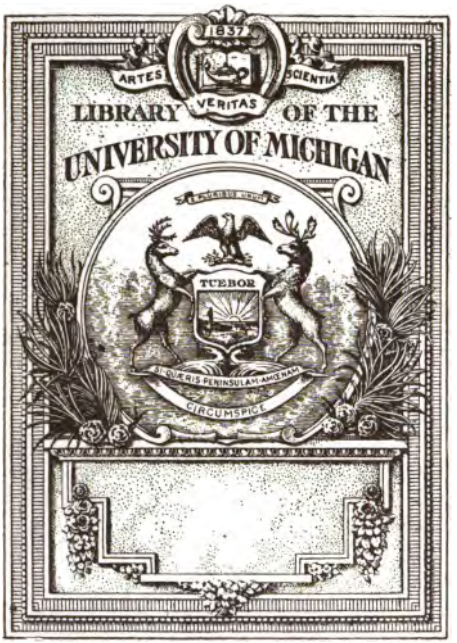
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A NEW BASIS FOR SOCIAL PROGRESS

A NEW BASIS FOR SOCIAL PROGRESS

BY

WILLIAM CHARLES WHITE

AND

LOUIS JAY HEATH

BOSTON AND NEW YORK
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TO
SIR WILLIAM OSLER
AND
RICHARD BEATTY MELLON

320309

PREFACE

In 1915 the Board of Trustees of the University of Pittsburgh, in order to produce a better and more properly functioning institution in the local environment, instituted a survey. This investigation extended in time over a period of nearly two years and led those engaged in the undertaking, as any attempt at analysis of an organization so large and so complex as that of our modern American university must inevitably lead, into many fields. The varied histories of our educational institutions of higher learning, their struggles, their reverses, their failures, their successes, and their present differences in degree of accomplishment, demonstrate the common comprehensiveness of the riddles which all are endeavoring to solve, and make clear the relationship which the problems confronting the local university bear to the general educational problem.

During the past few years all parts of our educational equipment have been subjected to both sound and unsound criticism. Our universities especially have been weighed in many balances furnished for measurement and have fallen far short both in organization and accomplishment of the weight desired. Simultaneously with this discovery, the con-

viction has been growing that quite regardless of the conditions obtaining at present among our universities and equally regardless of their histories, they are facing a future fraught with opportunities, if only those who are responsible for their destinies can be made to see their potentialities for service. It is this conviction, developed by study and investigation and strengthened by research, that has, in spite of the innumerable obstacles encountered in conducting the survey, stimulated those responsible for this volume to publication. While much of that which follows was originally projected that a single better and more serviceable university might be produced, study has bred the belief that the principles promulgated admit of the widest application. Even in the Supplement, while an attempt has been made to suggest ways and means of applying these principles to a special field, the suggestions are in essence, we hope, neither local nor provincial. Familiarity with the local conditions alone determined our choice of a community.

Needless to say, it is not purposed herein to discuss the history and growth of education. Neither is it purposed to engage in any part of the warfare which has been carried on during the past decade by vocationalists and culturalists. Yet the importance of the effects of the vocational-cultural controversy renders a statement of the point of view necessary.

As the struggle has continued, it has become evident that the ranks of both belligerents are filled with enthusiasts. A survey of the literature published during the last ten years dealing with education and the educational problems in America, of the minutes of the meetings of various state and sectional organizations, cannot fail to impress even the most casual that antagonists and protagonists fall into three roughly classified camps: at one extreme the culturalists, at the other the vocationalists, and between and exposed to the ceaseless fire of both the bewildered parents, who are concerned with the problem primarily as it touches the education of their own children, and who, confused by the amount of ammunition expended by the opposing forces, have been compelled to draw the small solace possible from an ancient stalemate, that "Much may be said for both sides," and have blindly trusted precedent with an historical faith in the traditional good lying somewhere in the thing called "education." The tide of battle has ebbed and flowed, the advantage of ammunition and popular support being now with one, now with the other; and the plight of the bewildered yet vitally concerned non-combatant has remained virtually the same.

The writers believe that culturalists and vocationalists both represent extremes; that somewhere, as between all extremes, there lies a norm; that any move-

ment, regardless of how praiseworthy it be in purpose, suffers in proportion to the extremes to which its enthusiasts and extremists proceed; and that while both culturalists and vocationalists do, as the layman believes, marshal much that is good about their banners, neither of them command all that is best. This study, however, is not primarily presented as a further contribution to the literature of warfare, but rather as an earnest attempt at the solution of an age-old problem.

Criticisms of the principles promulgated herein, which have been as freely invited as offered, have dwelt most with the *novelty* of the plan proposed. Conservatism must ever play its part. Yet in other fields of activity in America novelty has scarcely been an insurmountable barrier to progress. If our proposal be a novelty, as it has been heralded by those educators who have been approached for criticism, it is novel only in the field of education. The principles are ancient ones, long operative in every branch of scientific research. The newness lies, not in the principles, but in the application of those principles.

In conclusion, we wish gratefully to acknowledge our indebtedness to all those who have given of their time and attention and have stimulated by oral criticism and frank expression of opinion, and to all who in any way assisted the survey organization in

carrying on its work at the University of Pittsburgh. Especially are we under obligations to Professor Robert Palfrey Utter, of Amherst College, for his interest in and his criticism of the manuscript, to Dean Le Baron R. Briggs, of Harvard University, and to Professor Malcolm McLeod, of the Carnegie Institute of Technology, for their helpful suggestions and kindly assistance in technical difficulties.

WILLIAM CHARLES WHITE.
LOUIS JAY HEATH.

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A NEW BASIS FOR SOCIAL PROGRESS

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CHAPTER I

THE BUILDING UNIT OF INTERNATIONALISM

WHAT is the proper unit of population to be entrusted with autonomy as the building unit, first, of a nation, and second, of an international world? Internationalism is the great commanding movement of modern times. Given new impetus by the world war, that which only a few years ago was the dream of theorists and visionaries is coming to be considered, by practical statesmen the world over, the surest guarantee to all peoples of the inalienable rights of man and of a lasting peace on earth. Present developments indicate that we are moving toward such an era. But our passage toward internationalism can only be a drift until we have answered this first and fundamental question which internationalism raises.

The answer to this question is not to be found by turning the pages of history. The size of the unit to which autonomy has been granted in the past has varied with the demands of the period and the

growth of knowledge. Neither is it possible to eradicate the divisions of the past and build anew with fresh and unused materials. The fact must be faced that, no matter what the size of the autonomic unit determined upon, communities everywhere must be taken as they exist and all effort expended to establish within these already present communities the soundest principles which will project far on into the future the laws which will make for each the ultimate best that combined vision and knowledge can foresee.

While the drift toward internationalism raises new questions, more important still, it focuses attention upon present problems of government which have been multiplying in intricacy and difficulty with the increase in population and the diffusion of knowledge. So great has the task of making adequate and uniform provision for great aggregations of people become that solutions have been sought from many angles.

Steadily the realization has been growing that the voice of a nation resides chiefly in its municipalities. From the past comes the history of such independent cities as Milan and Venice; cities which led in the cultural progress of their age. Advancement came then, and has come since then, with the development of autonomy in communities and has been largely dependent upon the degree

of autonomic privilege allowed in business and cultural ways. From out the mass of partially successful experiments, of gropings and strivings, there has emerged evidence that warrants the belief that the soundest principle of government yet suggested is the unit principle; that the unit plan has most to offer in the way of solution for all our problems and can alone give definite guidance to international drift.

Cities in modern times have grown to enormous size. The soundness of a proposal must be measured by its inclusiveness and capacity to reckon with expansion. Herein lies the strength of the unit plan. For the principles of this ordain that, as population increases to a number beyond that which can be efficiently handled, the whole community must be divided into smaller, independent units with duplication of equipment provided in order that each may be allowed the degree of autonomy which shall bring forth the best possible results of uniform growth and progress for those residing in the territory assigned to each unit.

The acceptance of this principle would be but the recognition that the aim of government, of nationalism and internationalism, is, above all else, to provide uniformly fair opportunities for all with due regard to the bent and demands of nations, municipalities, and individuals. Let us but solve

the problem presented by municipalities and we shall have laid the foundations of a nation and of an international world, for they are but epitomes of larger groups.

Whatever the flaws in the structure of the German nation may be, its unprecedented growth and its municipal development, based upon city autonomy as outlined, after the Napoleonic Wars, by Baron von Stein, who sought to transplant into Germany the free spirit of English public life and institutions, is the best example we have of the application of some of these principles.

In 1808 Stein wrote to Hardenberg: —

> I regard it as important to break the fetters by which the bureaucracy obstructs all human movement, to destroy the spirit of avarice and pernicious self-interest, and the attachment to mechanical forms which dominate this form of government. The nation must be enabled to manage its own affairs and to emerge from the condition of tutelage in which an ever restless and vigilant Government seeks to keep it.

In a later memorandum he says: —

> The citizens are charged with the undivided administration of their communal affairs. The influence of the State is entirely restricted to supervision, with a view to seeing that nothing is done contrary to the purpose of the State and that the existing laws are observed.

Says Harbutt Dawson: —

> The idea which underlay all Stein's plans was a large decentralization of State authority, which was to add

weight and importance to civic life without organically weakening the central power.

The purpose of the Municipal Ordinance was . . . to give to the towns a more independent and efficient constitution, to create for them in the civil parish a firm point of union, to give to them active influence upon the government of the community, and by such participation in local government to stimulate and preserve public spirit.

For, as the old Germanic rhyme runs, —

"Niemands Herr und Niemands Knecht,
Das ist des Bürgerstandes Recht."

In America the growth of the same principle is to be seen also in the autonomy which has been allowed some of our cities, especially those in the State of Ohio. But progress in this direction has been retarded, and largely by the structure of the Nation. The Federal Government has been chary of granting new and additional rights to States. States, ever jealous of the rights which they possess, have been equally reluctant to relinquish any of them to municipalities. And when municipalities have wrung autonomic privileges from conservative State Governments, they have been equally loath to admit any decentralization of their authority by investing institutions and departments with autonomic power. And this jealousy, coupled with the failure of institutions, has obscured the fact that among the privileges of the larger units of population which make for community power,

national greatness, and for ultimate internationalism, none stand forth more brilliantly than does education. And among educational institutions, regardless of their inability to guide and direct the thought of America in the past, the most potentially powerful aggregation of all is that which we know as the university.

After all, it is not surprising that American universities have not exerted the influence upon national thought that has been exerted by the institutions of Continental Europe. Our universities have been forced to cope with the difficulties presented by a new, growing country too young to possess either national or educational traditions, and to meet the situation they have imported European ideas and have endeavored regardless of their suitability to transplant these in the New World. The adoption of Germanic principles of university education which resulted in Germanizing the curricula of our older American colleges was not the first evidence of such importation, and since that time the curricula, not only of the universities, but also of the secondary and primary schools, and especially of the kindergartens, have been influenced in innumerable ways by Old-World ideas and Old-World knowledge. Pestalozzi, Froebel, and Montessori are names as familiar in the nomenclature of American education as in European.

The only tradition influencing education in this country which can, in any sense, be termed "American," is, if it may be so characterized, the "ministerial." In the beginning, with the single exception of the University of Pennsylvania, the ministerial influence dominated the American colleges. This influence, as the founding of Harvard, of Yale, and later of Princeton and innumerable smaller colleges throughout New England and the Eastern section evidences, has always been a conservative one, clinging to the tenets of the past and receding gradually and grudgingly into new sections to found new institutions for the preservation of the old traditions. American institutions as a whole, save those which have sprung forth full-grown overnight, as it were, have never been entirely free of this influence. Particularly is this true of the colleges. These smaller units or parts of larger organizations have usually reached a period in their development marked as the parting of two ways, and they have taken one or the other as the ministerial tradition has weakened or strengthened. They have either held true to the principles promulgated by their founders and, turning away from a future, have remained small and unimportant save in a denominational way, or have broken to a limited degree with traditional principles to become for a time the storm centers of denominational upheaval and protest, and finally, have devel-

oped specialized units born in a newer age, facing the future more freely, it is true, but still loaded with the ball and chain of institutional tradition.

The government and administration of our universities has, however, been less affected by traditional European organization than has the curriculum. Changes in American university governance have been frequent, but they have, to a greater extent, been brought about by influences outside of what may be termed the "university world" and have been made necessary by the insistent demands of rapidly expanding communities, increased municipal wealth, the disappearance of apprenticeship, and the requirements of new and enormous industries. Numerous experiments have been tried, but here as elsewhere conservatism has played its part in retarding the development. American institutions have failed to keep pace in organization with the growth and development of corporate organization in other fields. Isolation also has had its influence. And the meagerness of the remuneration for administrative and academic service has assisted in forcing men qualified by inheritance, by nature, and by training to administer into occupations more lucrative.

In the main, our universities have followed rather than led in our national journey. Yet here and there at intervals, some have caught a gleam of their true

function and have endeavored with the light which they possess to seize their opportunities. The history of Johns Hopkins University exemplifies the point and suggests the influence which an educational institution may exert communistically, nationally, and internationally. A study of the brilliant example of this university under President Gilman, an institution which is in our time the only one built and established on a post-graduate basis, will amply repay all who wish to carry on research in this field. The effects upon the whole community of Baltimore that have followed the growth of Johns Hopkins in that city are among the most hopeful of portents and indicate what may be done in other communities. Yet despite this example, the greatness of the mass of our educational institutions has remained potential and will continue so to remain until in some community there shall appear men with the destinies of a university in charge, wise enough to see that this most powerful single arm of service can in no wise be developed as an independency, but only as a correlated part of the whole governmental and educational system.

The road to internationalism lies through the autonomic unit. The development of the autonomic unit is dependent upon education, and the most powerful factor in education is a guiding principle. The position of our universities makes it imperative

that they should assume the guidance and lead in rather than follow progressive thought. The building unit of internationalism is the university unit encompassing smaller units created for specific purposes, — units for common-school education, units for welfare and health for such common necessities as infant feeding, maternity, tuberculosis, and charity aid. The architect, the world war, is showing us the elevation of the structure to be built, but the building stones must be furnished by autonomic units of population and must be shaped and fitted by the master mason, Education.

CHAPTER II

THE PRESENT GENERAL TREND OF EDUCATION

However preconceived opinions may be, and however much they may be colored by early educational influences, no conclusions regarding the extrication of a people from governmental and educational difficulties can be drawn before a scrutiny is made of the modern general trend in education. So significant are present-day movings and stirrings that they must be reckoned with before any detailed suggestions pointing toward reconstruction can be offered.

America, during the past few years, has witnessed much individual activity and the drafting of uncounted committees to study the educational problem. Most important among these are such bodies as the General Education Board, founded by Mr. Rockefeller, the Russell Sage Foundation, the Carnegie Foundation, the Royal Commission of Canada, as well as many agents of the Federal Government and of individual States and communities. These movements and the surveys which have been inaugurated and conducted in various institutions are most significant of the general movement leading to an analysis of the problem by a scrutiny of the

causes which have brought about present unsatisfactory conditions. The surveys — of education in the State of Vermont and of Medical and Legal Education in America — under the auspices of the Carnegie Foundation exemplify the truth of this.

The fact has become obvious that the social philosophy of the American people has been continuously and persistently changing. These widespread movements toward analysis and critical study have been bred by the failure of the American educational system to meet adequately the demands of this evolving social philosophy.

One of the first great tests of the system came when education was made compulsory. This action created a demand, — a demand for primary schools, — and following this and forced by the graduation of children from these schools, demand for secondary equipment. In this way compulsory education for eight grades created demands which extended through to the equipment which attempted to meet the demands of the secondary schools. The struggles of all parts of the system to face this test have continued for years.

Another result of compulsory education, not so immediate, but no less important, was its effect upon apprenticeship. Compulsory education coupled with other causes, such as increased community wealth, the invention of machinery to do the work

formerly done by hand labor, and the amalgamation of small trades, ultimately effected the declination of the whole apprentice system. In the beginning, trade unions in America were largely made up of ignorant, uneducated, yet in the main good workmen. Compulsory education forced the children of these workmen into schools. Then, as the effects of this schooling became apparent, parents gradually became desirous that their children should have one or two extra years of education. Then, as to-day, the majority of workmen, as a rule, were desirous that their children remain longer in the schools than circumstances or inclination permitted their parents. As one immediate consequence of this, the boys and girls no longer wished to follow the calling of their parents. Young children, upon arriving at the time when they would have been bound out as apprentices in various trades, were compelled to remain in school.

This decline of apprenticeship, coming as a remote result of compulsory education, was another social change which tested the competency of the educational system. When the apprentice methods of training became no longer feasible, a new and heavy burden was thrown suddenly upon the educational system. Smug in its pharisaical position of superiority, dealing only with the gifted and the pre-professional, this system found its security sud-

denly invaded by hordes of those students who had formerly filled the ranks of the apprentices and who demanded now that it find for them occupations in the world. And although it is true that the school has aided a few to find such occupations, it has, through the selective standards of traditional school life, functioned but crudely.

Dr. Henry Suzzallo, President of the University of Washington, has succinctly stated the case against the former system. He says in part: —

> The whole system of schooling from the primary school through the college was pre-professional. The old-time teacher gave little thought to those who did not register at the school, — those who were not prosperous enough to take the leisure and pay the rate, those who were not interested in languages and books and abstract thoughts, those who were so handicapped in body and mind that conventional schooling promised little. . . . The school's selection, instruction, and protection, whether exercised consciously or unconsciously, favored the talented few.

The difficulties with this traditionally restricted service of the schools is summarized as follows: —

> The educational system sends into professional life more persons than are required. It gives little or no attention to the education and distribution of men among the very necessary and very numerous non-professional occupations. In consequence the professional suffers from overcrowding and from the type of economic competition that interferes with the idealism of professional service. But the other occupations fare worse, for they suffer from that all round incompetency which follows the com-

plete want of an appropriate choosing and training of men for tasks. Into the ranks of industry, agriculture, commerce, and personal service enter the men and women whose school experience has directly or subtly convinced them that they are partial or total intellectual failures, for the traditional school has unjustly measured the mental competencies of every type of youth by its high but narrow standards of pre-professional training.

The old type of education has been aptly described again by the committee which, in 1910, reported on the Newton school system: —

It selected, retained and educated those who were fitted by natural endowment and interest to profit by what the school thought fit to offer. Others were eliminated all along the way, but with little concern for the precious material thus forced to waste. It stood for uniformity in materials of education, in methods and in product.

The countless hordes of those members of a community who have found their occupation solely by chance having been cast forth as unfitted for a professional career and therefore only fitted for a position of secondary importance, are sad evidence of the truth of this.

Other natural results of such a system are the bread lines, the soup kitchens, and much of the social phenomena which unemployment has brought. The findings published in the report of the Royal Commission on the Poor Laws and Relief of Distress, London, 1909, might, in all truth, have been written of America.

We cannot believe [write the Commissioners] that the nation can long persist in ignoring the fact that the unemployed are thus being daily created under our eyes out of bright young lives, capable of better things, for whose training we make no provision. It is, unfortunately, only too clear that the mass of unemployment is continually being recruited by a stream of young men from industries which rely upon unskilled boy labor, and turn it adrift at manhood without any general special industrial qualifications, and that it will never be diminished till this stream is arrested.

With the march of time, however, there has gradually dawned a realization of the fact that the line of demarkation between the professional and the non-professional is a surprisingly indistinguishable one. Herein is to be found the cause for the activities of the various committees and boards. An analysis of the reports of these groups and individuals discloses that running through all the strivings are certain fixed principles which force this conclusion. A study of recent systems — English, German, and French, and those of the various American States — yields evidence of the same single desire; namely, to establish an educational plan that shall prepare at each given period, from those human individuals entering it, groups fitted for a special function in life, and when adequate specialized education has been furnished for each group, to add as much of the cultural as is commensurate with the number of years allowed each individual for the preparation for his life's work.

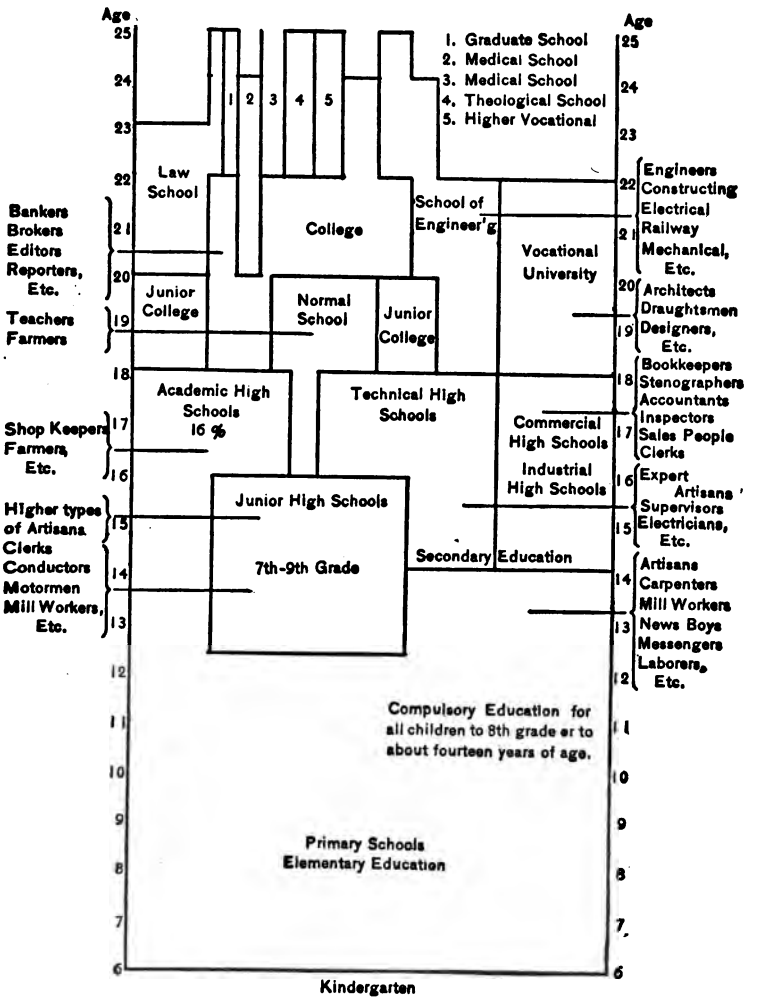
The schools of America have been slow to recognize the obligation which the passing of apprenticeship and the diminution of the traditional barriers between professional and non-professional occupations has placed upon them. The popular conception of education has changed slowly, it is true, but surely, none the less. A new group has seen that the larger contribution to individual happiness and social efficiency can be made only by aiding all rather than a chosen few to make the "transit from the period of education to that of responsible workmanship in the world."

In various communities there have appeared different expressions of the same tendency, each modified by the bent and demand of the community in which the educational system is to operate. The accompanying chart (p. 19) will perhaps indicate something of this trend of modern education during the past quarter of a century. The variations are many, dependent as they are upon the physical characteristics of individual communities and affected also by differing laws of differing Commonwealths. For the present purpose, however, this general chart will adequately serve to illustrate.

While the rural school or district school, as it is sometimes called, does not appear on the chart, its position in the educational scheme, important as it is, does not make for marked variation in the

system. Neither does the chart include the private schools and so-called "finishing" schools. The former occupy a place somewhat analogous to that of the high schools or upper primary schools. The latter, with their student bodies composed of those members of society not primarily interested in either early vocational or higher vocational postions in life, may be considered as appurtenances rather than organic parts of the system.

From this it will be seen that communities are all agreed on but six years of education — that period lying between the entrance to the kindergarten or to the primary school and the beginning of the secondary school. After this six-year period, in some communities, the junior high school has made its appearance. This school includes a year or two from the primary and a year or two from the high school and segregates within its walls certain subjects which will lead its pupils to definite functions in life or to higher educational institutions. Following this is a series of secondary schools of which the prototype is the secondary or high or grammar school of the past. At this point the delineation of courses becomes more marked, and we have the academic high schools, commercial high schools, vocational high schools of various kinds, and in addition, special courses in each of these individual institutions. These, all more or less at variance with the concepts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1. Graduate School
2. Medical School
3. Medical School
4. Theological School
5. Higher Vocational
Law School
College
School of Engineer'g
Vocational University
Junior College
Normal School
Junior College
Academic High Schools 16 %
Technical High Schools
Commercial High Schools
Industrial High Schools
Junior High Schools
7th-9th Grade
Secondary Education
Compulsory Education for all children to 8th grade or to about fourteen years of age.
Primary Schools
Elementary Education
Kindergarten
Bankers
Brokers
Editors
Reporters,
Etc.
Teachers
Farmers
Shop Keepers
Farmers,
Etc.
Higher types
of Artisans
Clerks
Conductors
Motormen
Mill Workers,
Etc.
Engineers
Constructing
Electrical
Railway
Mechanical,
Etc.
Architects
Draughtsmen
Designers,
Etc.
Bookkeepers
Stenographers
Accountants
Inspectors
Sales People
Clerks
Expert
Artisans
Supervisors
Electricians,
Etc.
Artisans
Carpenters
Mill Workers
News Boys
Messengers
Laborers,
Etc.

of antiquity, evidence the trend. The provision of certain fixed types of education and such specialization, by a careful delineation of courses, as will lead to an ultimate, is the educational ideal which has evolved. The ultimate continues to lie within the choice of the individual student, assisted, of course, by parent and teacher guides early in his educational life.

This development has been inspired and directed by the idea that, "It is the function of the school to educate every boy and every girl, to eliminate none and accept all. It fits work and method to individual needs, and strives to send children out of school just as individually diverse as nature designed them to be, and as the diversity of service which awaits them requires."

While this has been a recent growth in America, sufficient time has passed to prove that a delineation of courses starting at the end of the six compulsory years, in order to secure in the time prescribed for study any definite result in preparing for a life's vocation, must continue more or less indefinitely through the whole period of education. The secondary schools have begun to delineate for those forced by circumstances to leave the system at an early date. The parts of the equipment which attempts to train men for vocations requiring longer preparation, however, have seemingly been unable to profit

by the lesson furnished them by the endeavors of the lower schools to solve the problem for the early vocations. We have not yet come to realize, despite the activities of the new group in the early vocational field, that if delineation of courses is essential for the filling of early vocations, it must be equally essential for the filling of higher vocations. The attempts made by universities to grasp the truth of this idea have resulted not in delineation so much as in division and wasteful duplications. Our universities have split into Schools of Education, Schools of Economics, Schools of Mines, Schools of Business Administration, Schools of Journalism, and so on, with the result that the idea of delineation has, to a large extent, been lost sight of in the inter-school competition which has arisen.

With this delineation and attempted delineation has come a broadening of the concept of vocationalism itself, little recognized as yet. For a long time we have been laboring under the delusion that medicine, theology, and law are not only professions but also higher professions. As a matter of fact vocation and profession are synonymous terms. Furthermore, the word "higher" applied to vocations can only carry temporal significance. It may be used solely inadequately to differentiate those vocations which require, of those entering them, a long period for preparation, from those which require a shorter

period of time. "Early" and "late," as applied to vocations, would possibly better serve the purpose.

The error arising from the failure to recognize that "higher" has no other value than this, has continued to find residence in the popular conception. This conception has insisted that "higher" denotes special exalted qualifications, possessions necessary for an individual's entrance into any one of the three so-called "professions." This has continued to persist in disregard of the fact that into these late vocations are admitted, even by State license, individuals possessing widely divergent characteristics. Into the ranks of medicine are admitted types ranging from the low producer of illegal abortions to an Oliver Wendell Holmes; into the law, from the fee-splitting pettifogger to a John Marshall; into the ministry, from the hypocritical, frock-wearing frequenter of the brothel to a Ralph Waldo Emerson or a Phillips Brooks. Even in the so-called "vocations," we find, at one extreme, a Josiah Wedgwood, and at the other, the most lowly workman in the potteries.

Who, then, shall say that there is a line of demarkation between high and low, between profession and vocation? All are vocations of the living, cosmopolitan body which the educational system purposes to care for. All may fittingly, and without disgrace to any, be labeled simply "vocations of life." It is safe

to believe that at no far distant date the ultimate recognition of the application of the term "vocational" to all earning professions will come. And when that time arrives, the knowledge that the same fundamental laws permeate the entire system will break upon the minds of all gladiators in the present vocational and classical combat.

It is these tendencies, together with the failure of educators generally to realize the broad applicability of the word "vocational," which have divided those who are interested in education into two groups, each warring with, and often abusing, the other. The so-called "cultural" group which has come through the ministerial institutions of the past has endeavored not only to retain the ancient classical traditions, but also to resist even the truths presented by the present vociferous group in education known as the "vocationalists." The latter spends most of its argumentative power in decrying the cultural which now resides comfortably housed within the walls of the colleges and those unspecialized institutions which feed them. Across innumerable pages of recent educational history these two warring factions have rioted waist-deep in ink, and as yet no neutral has appeared either strong enough to compel arbitration or clear-visioned enough to see that absolute victory for either party would mean the ultimate loss of much that is good in both. The impetus of the revolution

has so obfuscated the truth that but one fact now remains clear for non-partisans — and that is, that the time has come for a careful readjustment. The way must be chosen and carefully picked between these warring groups, and a complete realignment of our whole educational system must be undertaken in order that that system may meet the present demands of each community so that it may take its proper place and fulfill its proper function in the Nation. Nothing can be accomplished by crying down the cultural, nor can any valuable results be secured by abusing those whose keen desire is for progress even though the conception of this progress may be colored by unbalanced and biased enthusiasm. Vocational education is bound to claim its proper place in the educational system of the community, and this means that its place is one involving the sum total of happiness and efficiency of approximately ninety per cent of the population.

CHAPTER III

SOME PRESENT-DAY INFLUENCES AFFECTING EDUCATION

CULTURAL and vocational warfare, with its attendant conservatism and radicalism, is but one among many influences coloring our present-day system of education and making readjustment difficult. Others there are of equal importance, and all raise questions which demand definite answers before the larger, inclusive problem can be solved.

Perhaps the most serious among these influences, and one which is at present vitiating many attempts at honest reconstruction, is the political. This octopus, which has thrown its sucking arms about so many of our American universities, has found their peculiar sustenance highly conducive to its own growth. Politicians, eager for office and consequently desirous of pleasing their constituency, have not scrupled at the effect which the gratification of private desires might produce upon the educational system. Senatorial scholarships have furnished for the politicians a ready and not insignificant avenue of approach to the coveted position of influence and have aided not a little in placing the cross in a particular circle on the ballot. Nor are scholarships meted out only to

Senators. Almost any member of the State's political brood may share in the allotment. Rarely have the standards of measurement been true ones, and, when evil results have followed, legislative patronage, the fear of jeopardizing personal positions by offending any part of a constituency, has rendered politicians unwilling to make any efforts toward reform even though the evidence of the necessity for such reform has been furnished in abundance. Reforms from within the institutions themselves have likewise not been forthcoming because of the subservience to groups of none too well-educated and none too ethical legislators. The American university has become a powerful political factor, and the larger the institution, the greater the power exercised. An increase in the size of the university, therefore, has correspondingly increased the strength of this arm for political service.

It has, therefore, developed that in those communities where institutional maintenance is largely dependent on State appropriations, the weightiest argument for State aid, so called, has come to be numbers of students. The rapid growth of State universities has given evidence of this, and, in most instances, the enrollment in such institutions has been swelled by competition for the supply which should have been cared for in part by other institutions of special character. These, because of their special

nature, have been constitutionally unfitted to exert strong influence upon legislators and have, therefore, been unattractive as a field for political exploitation.

Scripturally sound as the policy of the State has been in ordering that to those institutions that have shall be given, it has been educationally unfortunate for those members of society caught in the drag-net of such institutions as have for their policy quantity rather than quality. So from this situation has arisen the first of our questions — one which must be answered by the trustees of every American university; namely, How much shall the organization exert itself to increase its numbers to the sacrifice of intensive work in the fundamental fields of knowledge?

Associated with this problem is the serious physical difficulty in the relation of the existing physical structures to a population which increases too rapidly for housing. In the case of many universities, which, owing to political influence and consequent State aid, have abnormally expanded, the physical plant has failed to keep pace in growth with the increase in numbers, and ochlesis and injustice to students from lack of facilities have been entailed. In a country where universal education is the rule, it is not surprising to find the university organization falling far below that point of efficiency which rapidly increasing numbers make imperative. The mis-

use of space and the failure to utilize space and time have inevitably followed as one of the minor, but nevertheless important, results of unprecedented growth. Coupled with this, the weight of priority of position and occupancy has been an influence no less marked in lowering institutional standards, and has crippled efficiency for years. For example, the School of Mines in the University of Pittsburgh has persisted with meager equipment and high operative expenses, although there has grown up in the community not only a very efficiently equipped technical school, but also a nearly completed Federal Bureau of Mines. The School of Mines makes as its sole claim for preëmption of subjects, priority of existence. As a counter-example, the fate of the Library School of Drexel Institute may be cited. This school, which had outlived its greatest usefulness, the authorities dissolved. Such praiseworthy action as that of the trustees of Drexel unfortunately stands out, however, as an exceptional example of wisdom.

The experiments in Gary and in New York called attention to the evils in that ordinance of antiquity which decreed that buildings should be used only from nine o'clock in the morning until three or four o'clock in the afternoon, with an hour and a half intermission, and proved the feasibility of working the educational plant for night school and social center activities for many more hours. Such utilization of

space to the maximum is important, not only in its effect upon cost of operation touching primarily the taxpayers of the community, but also upon the students and the nature of the work itself.

Of greater importance than the saving of space and time were the changes which made the utilization possible, namely, the delineation of courses leading to definite ultimates. This aspect, which has presented itself as yet only in this small yet significant way, has scarcely been clearly recognized. It does, however, offer the second question which demands an answer; namely, What must form the basis of a proper delineation so that the interests of the community as a whole may in no way suffer from extremists who would lift efficiency to the point of fetishism?

The third question grows out of the one preceding. The providing of teachers for vocational groups would appear to be a duty and function of the State. The providing of teachers for those institutions which lead toward the advanced fields of education would appear, at least in the light of present knowledge, to be the function of the university. As always happens, however, in the development of a rapidly multiplying race, certain demands are created quickly. Voluntary agents take up the work of supplying these demands only to create the necessity, at some future time, for dissociation and for cooperation by those institutions supported by the

Government — those which should have had the foresight, in the first place, to provide a supply for the demand. The question is, then, How shall we arrive at a correlation of the different educational institutions serving a given community in order that the delineation of courses may exist throughout the whole system? And also, How may we apportion to each institution the part of vocational work properly belonging to it? The discovery of a definite answer to this question of dissociation and coöperation will undoubtedly lift us out of many of our educational difficulties.

Another significant influence affecting education at the present time, and raising another important question, has grown out of the advances made in biological study. We find frequent evidences of sentimental and untrained attempts permeating whole educational systems before any one is conscious of what has happened. This has been, to some extent, the case in the importance which has been placed upon the study of degenerate and backward children. Because certain progress has been made with backward children, by special methods, the whole educational system has become suddenly filled with theories concerning the education of all children, based upon these, despite the fact that there is no satisfactory evidence that methods of training children of arrested development necessarily apply

in the training of normal children. The unrestrained enthusiasm which has greeted the efforts of Froebel and Montessori is a striking example of this. Studies have been made in play schools and have been carried on by those who possess small knowledge of biology, chemistry, anatomy, or physics, and yet these subjects must be recognized as of basic importance in the study of the human.

In all these experiments certain preconceived notions have been put in operation for small children. Few institutions in America have escaped the blight of this form of educational quackery, and none, it would seem, have fully realized that to devise methods for adequately furthering the educational interests of the brightest children is as necessary for the progress of the race as is the provision of means for lifting backward children. These sporadic attempts, which have already been made, have not only failed to answer the question as to what is the best method of training the child, but they have also unnecessarily complicated the problem of realignment.

It may be said, in all truth, that the best way of educating children has not yet been discovered. Also it is true that so much of education is a personal quality on the part of the teacher, that *perhaps no hard-and-fast law can ever be laid down for all educators to follow.* It is not likely that the great problems facing the community will be solved until suitable

teachers with adequate knowledge of the fundamental physical sciences are forthcoming.

Research in biology and in chemistry during the past quarter of a century has bred a consciousness that many of the mental states of children are due to the secretions of internal glands, to food, ventilation, and freedom from disease. Perhaps, at no far distant date, we shall find that the thoughts we have, the imaginations we express, the fears we harbor — even our susceptibility to outside influences and our attention — can be explained only by the chemical production of our glandular factories.

It is too early to speak with any authority on this point, but several late discoveries contain enough of positive fact to suggest that, in view of what may come in the future, caution should be exercised in adopting any theoretical, methodistical form of education. The results — of treatment in such conditions as cretinism, hyperpituitarism, and adenoids, of the betterment of the food and the air supply — stand as evidences of the variations of mental aptitude which arise from these sources and intimate the folly of modifying education for the entire human race on theoretical suggestion. Delineation of studies for groups, sifted from the less ready, chosen on the basis of aptitude, probably contains a better solution at the present time.

Again, knowledge of the influence on the human

family of extra-corporeal parasites, such as the *Tubercle bacillus, Trichina spiralis, Plasmodium malariæ*, tapeworm, and hookworm, which manifest themselves in various communities, has also forced a modification of views concerning low mentality in communities where such diseases exist. While it is not necessary to decry the attempts which are being made in play schools, it is nevertheless important to advise prudence. These problems should receive attention only after the fundamentals of health and education are fully provided for.

As important as are these recent influences affecting education, equally influential is another heritage which has been bequeathed by antiquity. This tradition has persistently insisted that balance of power in boards of trustees shall be held by members of the ministerial profession, and this has been the peculiar patrimony of universities and those institutions which provide so-called "higher education." Those institutions which have broken away from the domination of this decree have usually gone to another extreme no less unfortunate. Consequently, to-day our university boards of trustees are composed either of a majority of ministers holding firmly to traditional views concerning education, or of a majority of capitalists possessing little time to devote to their extra-occupational trust. In either case the boards have remained autocratic.

When the balance of power in boards of trustees has remained with the members of the ministerial profession, perhaps the heaviest autocratic rule has been imposed. The autocracy has been the more complete because the president of the institution to whom such a board delegates some authority has also all too frequently been an autocrat and of ministerial training.

When the other condition has obtained, the trustees, possessing widely divergent views and little knowledge concerning education, while still occupying an autocratic position (the court of last appeal), have usually delegated their authority to two agents, first, to a smaller executive body formed from among their own members, and second, to the president of the institution. Here again, although power is centered in two places, the autocracy has been none the less complete. The president has become supreme over his faculty. The executive body has become supreme over the policy of the institution and the budget which bases that policy. The president so situated has exercised his autocratic power to secure his own interests against faculty legislation which might jeopardize them. At the same time he has been fronted with the constant necessity of congealing the opinions of the members of his board. Success accrues to the autocratic president in proportion as he interprets the ideas and views of his superior

autocratic body. And these bodies, when composed of men not primarily interested in educational problems, are dominated by ideas which were prevalent at the time when they were passing through the formal educational mill. By their well-nigh absolute monetary power, they are able to force their limited views and preconceived notions even upon those institutions which contain experts in all fields of knowledge, and consequently are able to suppress development and retard progress. So when harmony obtains between these forces, the president of the institution remains the supreme autocrat, interpreting the restricted views of the monetarily powerful group and, as such, is a constant menace to progressive thought.

When the autocratic president and the autocratic executive body have come into friction and the president has not been able to mould opinion, another type of failure has resulted. In such cases the executive body has frequently resolved itself into a kind of debating club upon which the wisdom in Macaulay's statement, "Armies have won victories under bad generals, but no army ever won a victory under a debating society," has been wasted. Dissensions, suspicions, and general unsettled conditions with their evil consequences have followed. So it has happened, that in America, epitomized as "The Home of Democracy," we find our universities, in strik-

ing contrast to the spirit under which the American Nation has been developed, in the grip of autocracy.

Truly the situation is a puzzling one. If the tenets of democracy be sound, — and there are few Americans who believe that they are not, — it would appear that the application of democratic principles should be made in our educational institutions — our training-schools for citizenship. The spectacle of autocratic institutions training citizens for a democracy is paradoxical enough to be ridiculous. The fifth question arising, then, from this is, How can American universities be reorganized that they may contribute most effectively to the national experiment in democracy?

It must not be inferred that the five influences mentioned above are the only ones which we conceive as operative in the general educational field. Nor are the five attendant questions the sole queries demanding answers before the solution of the whole problem can be found. There are, of course, many influences and innumerable interrogations all important enough in themselves. But we believe that these are so correlated that by satisfactorily answering the five questions herein proposed they too will be answered. Before this can be done, however, we must pause for a moment to ascertain the nature of, and the purpose in, education.

CHAPTER IV

THE PURPOSE IN EDUCATION

From time to time numerable definitions of education have appeared. Each has been colored by the age in which it was born and by the conditions which the state of society then existent imposed upon the race. And it is true that whenever and wherever statements of the purpose or aim in education have been set forth, a clearer conception of the ideals toward which humanity is struggling has preceded.

Two races in two ages have given to the world two ideals. Wherever the human species is found, the aims of all members are alike, namely, to compass one or the other or both of these. Lesser ideals have appeared — countless numbers of them — as man has pushed his way farther and farther into the unexplored, yet all are but smaller parts of the greater and, when followed through to their ultimates, lead inevitably to these.

All man's endeavors, all his searchings and strugglings either in the eastern lands of Confucianism or in the western world of Christianity, are toward these. The Hebraic ideal of duty and the Hellenic ideal of beauty must continue to remain the all-

embracing goals of human endeavor. And in proportion as man succeeds in following the two, so he succeeds in gaining happiness.

Education, then, if containing aught of value, must perforce be appraised on the basis of its contribution to the guidance of the members of the human family nearer to the ultimate conception of both ideals and to a realization of the consequent happiness.

The monks, who in the early centuries sealed themselves within their cloister walls, saw only the ideal of duty through the dark glasses of a dark age. The road to the attainment of this ideal led, for them, through celibacy and the doing of the difficult and the unpleasant task. The knights, who broke their lances in the tourneys and held as their choicest boon the smile of the mistress whose colors they wore, who poured their blood on the thirsty sands of the Holy Land and found their happiness in the rigors of physical combat, were in no less degree striving to attain their ideal. Followers of the light of beauty, their ancestors dreamed in the streets of ancient Athens and trained their children on the plains of Sparta. For the monk, education was the means to the end, for the knight in no less degree.

In those days the mental was at one extreme, the physical was at the other, and these ideals of education continued to be so placed until the two extremes

were joined by the promulgation of the doctrine that the aim in education was to produce a sound mind in a sound body. With each new age since then a closer union of the two has come until at last we are able to see, beyond the immediate and beyond the complexities and confusions of ultimates, that the aim in education is to produce neither the perfect body alone nor the perfect mind alone, but rather to lead man and the race to that happiness which can only be born by encompassing the all-inclusive ideals of duty and of beauty, that the two are inseparable and perfection cannot be attained by following either one or the other alone.

Perhaps it was John Milton who, by his widening of the application of the principles which Quintilian earlier advocated solely for public speakers to include all men, first joined the two ideals. Milton declared that the aim in education was to fit a man to perform justly, wisely, and magnanimously all the offices, both public and private, of peace and war.

Since Milton's time other ramifications have come. The aim in education is "to lead men's souls to higher things," "to train the hand as well as the head," "to make man a better individual, a better neighbor and a better citizen," "to increase man's efficiency and capacity for social service," — these are some of the definitions which have evolved. All may be true in

toto, or in any part, but none of them include the all. *The aim in education* is to bring man nearer to the compassing of duty and of beauty and by so doing *to increase the sum total of human happiness.*

The goal of human endeavor has not changed. Man's conception of the relationship which courses of action bear to the acquirement of the ultimate has alone expanded. The difficulties lying in the way of attainment have multiplied, and with this multiplication has come an increase in the number of open roads luring the traveler to follow.

"There is no royal road to happiness," reads the platitude. There are few unmistakable blazings of duty and of beauty along the trail to point man's steps unerringly and unfalteringly to the greater happiness. Members of the human family have ever been partial to the "short cuts" and have followed many of these only to find themselves led far afield and forced to return again and again to begin the struggle afresh. All evolution has testified to this, but it has also borne evidence that, as a thing becomes useful, so also it becomes increasingly beautiful and so also does its simplicity become more marked. Therefore, it is safe to believe that the educational system which, in the future, will increasingly provide the means for the race to attain its end will be a simple one, and, as simplicity is achieved in the means to the end, man's conception of beauty

and of duty will inevitably become increasingly clearer.

As time has unrolled the parchment of world-history, man, in spite of his wanderings and his yielding to the temptation offered by the short roads, has advanced, and, as he has neared the seemingly unattainable, new concepts of beauty and of duty and of what constitutes the greater happiness have come. "Social evolution," "changing social philosophy," "the recognition of civic responsibility," under whatever different names it temporarily masquerades, it is but the expanding of the human mind and the broadening of the human vision to see nearer and more clearly to this one ideal.

It is a far cry, perhaps, from the beauty of the frieze of the Parthenon to the beauty in a public health contrivance, but the progress from the one conception to the other, toilsome and wearisome as it has been, has also been inevitable. The human mind which, in its search for beauty, found little of the beautiful in life, and that only in what it chose to call the higher arts, now finds difficulty in discovering that which is only ugly. The definition of the beautiful has expanded to include all those products of man and of nature which make for the happiness of the human. No longer is that only beautiful which alone delights the eye. That which is useful, serviceable, and instrumental in bringing happiness to the greater

number has also come to be included. There is no reason to doubt that, in the ages to come, this concept will expand farther and still farther. Yet with all, we may believe that whatever our progress toward the realization of our ideal, whatever our advancement toward a state of universal happiness, man's reach will continue to exceed his grasp.

Viewed thus, the end of classicism and vocationalism, utilitarianism, and even commercialism, is the same. The difference between classicists and vocationalists is a difference of opinion regarding the means to the end, not in the end to be achieved. Only in the means of attainment, the methods of accomplishment of the purpose, lie the perplexities. There can be no higher aim in education than this — to increase the sum total of human happiness. And no educational system which falls short of a substantial contribution to this end can be considered adequate.

There was a time, in the history of man, when food, clothing, and shelter, the primal necessaries of life, appeared to be the goal. And while it is true that the provision of these still remains as essential as formerly, it is also true that the widening of the concept has changed their position to the base, and while the difficulties in insuring them to the added members of the human family have multiplied, this has long since ceased to be the compassing aim in education. No

system which holds to the provision of these as its ultimate can now be adequate. The stage of mental development which once so ordained has now thankfully been passed.

The question which must be faced then is, What system of education can be evolved which will contribute most substantially to the increase of the sum total of human happiness? Already we have seen that this total cannot be increased solely by enlarging the capacity of the individual; that if we are to succeed, we must progress by opening the way for all. Progress itself is measured by its lowest boundary as well as by its highest.

Throughout America, of late, has gone up the cry that the present system of education is in no way adequate, that the products of the system are only insufficiently equipped to take their places in the world. This truth applies not only to those who have been compelled by force of circumstances to leave at the lower points of departure, but also to those favored ones who have been allowed to continue in the system even as far as the graduate and the professional schools. The system has endeavored to meet this difficulty by forming combinations between the educational systems and the industries. By such combinations, known as "coöperative courses," students pass from mill to school and back again during the progress of their passage through the school.

That this plan has not fully coped with the difficulties is attested by the development within our industries of special courses of training into which graduates of our technical schools and universities must go for a period of from two to four years before they can be considered properly equipped to assume any position of responsibility within the industrial organization. The evil in this is apparent. The procedure not only constitutes an exploitation of the university product by the industries, but also is a serious indictment of the whole educational system.

There can be no doubt that the sum total of human happiness would be tremendously increased if the products of our educational system came out at given points, determined always by the capacity and resources of the individual and the demand of the community, adequately equipped with sufficient knowledge to enter at once into whatever field of activity the student has elected as an ultimate, at some time earlier, in his educational career. Nor does it seem excessive to charge that it is the duty of the educational system to furnish its products with the equipment necessary for a taking of the proper place in the community, to fit its students to be self-supporting and desirable citizens, to wed both the vocational and the cultural, in order that those who come forth may be able to provide a living for themselves and for those ultimately becoming dependent upon

them, and at the same time to school the individual in the duties of citizenship; or, in other words, to make a man who shall be a vocational specialist and at the same time a latitudinarian. A vocational specialist that he may earn; a latitudinarian that he may richly live. Only in this way can the sum total of human happiness be substantially increased and the aim in education be realized.

The promulgation of a new theory for educational advancement must ostensibly have its primal cause in the inadequacy of the present system. The dangers in attempting to change any historically established plan must not be minimized. The gravity of attempting to alter the educational system which effects so widely must not be underrated. Too many experimenters have already forced their theoretical ideas upon the trusting public. And while the failure of these attempts stimulates to action, the magnitude of the possible effects of change advises caution. It is, therefore, the hope that the plan proposed in the pages following may assist in extricating us from our difficulties, and the faith in the simplicity of the scheme and the soundness of the principles upon which it is based, that have urged this production. The largeness of the results obtained would, of course, be dependent upon the degree of success of the plan, but the nature of those results, whether they be great or small, would, we

are confident, be only beneficial. Furthermore, the preclusion of evil results also gives us courage to raise still another voice in the wilderness of educational endeavor.

CHAPTER V

ANALYSIS OF ULTIMATES — THE BASIS OF EDUCATIONAL REFORM

If the aim in education, defined in broadest terms, is to increase the sum total of human happiness, analysis to determine first the nature and second the factors of happiness would appear to be the only safe process to employ preliminary to the establishment of any educational system. Furthermore, if the passing of time disclosed the fact that a system thus established functioned but indifferently in furthering the purpose in education, re-analysis to discover the source of error would again seem to be the practicable procedure. Chemistry, that greatest of all sciences, has taught us that reconstruction by synthesis to trustworthy resultants must be preceded by painstaking analysis.

Man in the primitive state, an isolated individual dependent on his own resourcefulness, attains fullest independence. Discovering by analysis the requisites for happiness of such a being, in such a condition, was not a difficult task. Food and usually shelter and later clothing expressed his demands and most of his desires, and the provision of these placed small burden upon any educational system.

History has, however, demonstrated that man was not destined to remain in his primitive state of independence. The tendency has always been for individuals to gather into communities, and these in turn to grow larger and larger. The effects of this evolution upon man have been marked. Men have become first interdependent and finally almost completely dependent upon the factors in communal life. Governmental restrictions and the demands of one's neighbors have become most important in limiting personal independence. An individual's happiness has thus become increasingly dependent upon the happiness of the community, and the requisites for the individual's happiness have in like measure been modified and augmented by communal requirements.

The world has long been familiar with the simple demands of simple communities. The individual living in such a community must give from his own time a sufficient amount for the performance of the various duties imposed by communal life. So few may be these duties that the training of the individual to perform them places small demand upon the educational system. In fact, so small and simple may be the community that little or no educational system may be required.

Size ever makes for complexity. As communities enlarge, therefore, the more complex become their

structure and their demands, until the most complex educational equipment is required to meet the demands of the largest communities.

As the demands of an enlarging community become more complex, the demands upon the individual residents increase. In like ratio also the requisites for the happiness of the individuals multiply. The educational system forms an essential part of the equipment necessary to any given community to promote the happiness of its indwellers. In proportion as it meets the increasingly complex demands does the system prove its adequacy or inadequacy. Here lies the test of our present system.

In America, during the past fifty years, municipalities have grown too rapidly to be either natural or orderly. As a result they have outstripped in their demands the supply of educational equipment required to provide happiness for the individuals constituting their body politic. Indeed, in all candor it may be said that the present system has not, in any satisfactorily organized way, taken cognizance of the demands of rapidly enlarging communities. Despite this, such demands form the market for the products of our schools, and the laws of supply and demand which govern and shape the development of our industries must, in the end, be seen to apply equally to this greatest of all industries — the supplying of men and women properly trained and

equipped to take their various places in the community.

No systematic attempt has ever been made, in America, either to analyze the complete demands of a community or to take steps to prevent the glutting of certain fields of the market. Industries, it is true, have unconsciously analyzed some of the requirements for limited vocational groups, and have been partially successful in forcing this knowledge upon the resisting schools, but farther than this there has been little progress. One has only to examine the alumni records of our schools of engineering to see how many trained for engineering work have passed into other fields of endeavor. In fact, one exaggerating cynic has pointedly remarked that about as many engineers continue to pursue engineering work after their graduation as class poets continue to specialize in the field of poetry. "What has become of our class poets?" facetiously asked this recent questioner. "What becomes of the graduates of our various schools of higher vocational training?" might be asked with equal pertinence and far greater seriousness. The alumni records tell but a small part of the story. And what is true in this particular higher vocation is equally true in others. Again it would seem, therefore, that if the aim in educating is to increase the sum total of human happiness, an analysis of the demands of a commu-

nity must form the soundest basis upon which to build an educational system within any given area.

The varying occupations which constitute the demands of a community, when discussed in terms of the individual forming a part of that community, we choose to term "individual ultimates." Again speaking in terms of the individual, it is evident that happiness can first be substantially increased by directing the individual's choice of an ultimate to such a one as actually exists as a demand of the community. In other words, an analysis of the demands of the community, while of first importance to a sound system of education, does not constitute the complete task, and would not, in itself, be sufficient to insure the greater happiness to the greater number. Coupled with such an analysis, there must also be a tabulation in order that the public, to be educated, may know what the market conditions in given occupations are.

In addition, at some time early in the educational career of each individual careful supervision must be exercised over his choice of an ultimate in order that when he emitted from the system at any given point, he may be able to find awaiting him the first essential for his happiness, namely, a position. The individual having made such a declaration as to his ultimate guided by the knowledge obtained by making a tabulation of the community's demands,

it would then become the function of the educational system to provide him with those essentials that would command the highest market value immediately at the time of his issuance. Viewed in this way, the immediate object in sending the individual through the system would be to equip him for his function in life. This function includes the understanding of his individual, his family, his group, State and international relationships, and in proportion as a man understands and fulfills his function, will the larger contribution to the sum total of human happiness be made.

To repeat, the first purpose of an analysis such as has been suggested would be to determine the requisites for community or group life. These, when ascertained, must be analyzed more and more carefully, until a knowledge has been obtained sufficient to direct an intelligent beginning of a realignment of the educational system to produce a system that will lead each one of those who enter it out at the given point that the member elects — provided always the demand exists for that particular ultimate — fully equipped for his life's work.

After requisites have been provided for, there should follow a careful analysis of other needs which are not, strictly speaking, requisites, but which are nevertheless added in greater and greater numbers as human knowledge increases, and which,

in varying degree, contribute to the gross happiness. Following this backward, step by step through the demands, should come an analysis to ascertain what constitutes the essential equipment of the individual and later what constitutes beneficial equipment not primarily essential.

The complexities which a proposal such as this suggests are not as serious as they would appear on a superficial approach to the subject. Those that fill the mind with awe, as it contemplates our huge, unwieldy, and overgrown municipalities of the present time, fall away when thoughts revert to the smaller communities of which the larger ones are but multiples.

As has been seen, an analysis of the composition of communities leads finally to the individual members. Synthetically speaking, these members are associated in smaller groups or families located in homes or institutions, rearranged daily by occupations and spread out again later into groups possessing similar educational functions and characteristics. Where those groups are segregated and separated by intervening distances, an analysis of ultimates would be an extremely simple process. Likewise, if partitionment were to precede the process of analysis in the larger communities, the main mass of difficulty would soon disappear. In other words, if the work of analysis of the ultimates of the larger

aggregations of people be reduced to a study of small individual groups, the analysis of the whole might be accomplished quickly and thoroughly. Then, by tabulating the findings in the smaller units and by gradually correlating these for larger and larger bodies formed by the uniting of the lesser components, knowledge would be obtained of the complete demands which any community, no matter how large, presents for supply to the educational system which purposes to take care of it. Only because we have not followed, in our methods of organization, our highest intelligence in the arrangement of the machinery with which we attempt to provide for the demands of our large communities, does the problem at first glance appear to be so complex.

The success of divisional autonomy and responsibility throughout military and large business organizations should long ago have suggested that this was probably the best form of government for human control. Had we recognized this, and had we, in our large municipalities, retained the knowledge that there was a unit of population easily governable, and had then multiplied this local autonomy, we should never have fallen into the severe straits in which we find ourselves to-day. Also, had this course been followed, it would have been easy in each small unit to obtain a tabulation of the ultimate demands of any community and to use this

knowledge in providing the equipment which would produce for such a community a supply of adequately fitted human individuals. What, in a more or less careless way, we attempt to do on a small scale, to-day, in compiling such meager statistics on various subjects as are asked for by special organizations is a step in the direction, but we have never yet, it would seem, seen the applicability of the principle to our large communities.

Exceptions to this are to be found only in experiments which have been conducted in special, and consequently restricted, fields, and these have been made conspicuous as much by their isolation as by their success. Most of these endeavors at unit analysis have been carried on in the furtherance of public health and welfare.

An organized. intelligent effort at the realignment of the educational system from this point of view would require a most carefully detailed study of all the interdependent and dependent demands of the individual dwellers in the community and the most cautious application of the principles evolving from the knowledge gained to the system of education. The fact that markets have been so glutted, in the past, by the present system, strengthens the belief that such an analysis of the community would form the only rational basis upon which to build a sound foundation for an adequate educational system for

any community in the future and should precede any change in the educational equipment already existent.

One of the chief difficulties, if not the main difficulty, encountered in promoting such a plan would be ignorance, for despite the fact that no marked progress has been made in any of our modern sciences prior to an analysis made by the human mind of the greatest ultimate phenomena, we are only beginning to sense the tremendous importance of the principle involved. One need only to be a tyro in chemistry — the most fruitful of all our sciences — to appreciate that whenever contributions to progress have been made, they have been preceded always by an analysis of ultimates. An analysis, for instance, of the albumens, the living ultimates of life, has formed the foundation of our present new visions in the field of biological chemistry. In short, this principle of analysis of ultimates has been the inherent nature of progress in all ages, despite our inability to apply it to other than special fields.

In considering the proposal for such an analysis, the fact also must not be lost sight of that ultimates reside in all individuals comprising a community and range from those held by the most brilliantly intelligent members of the family to those of the lowest criminal and degenerate. The undesirable

lowest we would endeavor by our educational system to eliminate. The desirable highest we would strive to reproduce as rapidly as possible. The analysis then would include the great mass, approximately ninety per cent, who belong to the groups asking only from eight to fourteen years of education, as well as the remaining ten per cent with tremendously varying ultimates who may ask for a lifetime of education, as a preparation for and a concomitant to the fulfillment of their functions in the community.

In conclusion, then, we would suggest, first, that the community which purposes to be in the forefront of the next generation should begin an immediate reconstruction of its governmental equipment in order to enable it to collect through certain feasible units the information which would constitute an analysis of the ultimates for the whole community, and second, that these figures acquired in the units be carefully tabulated and correlated for the community, and that upon this knowledge the foundation of its educational equipment be built and modified.

CHAPTER VI

A MODIFYING FACTOR—REGIONAL VARIANCES AND THE BENTS OF COMMUNITIES

To the mind which dwells upon the feasibility of such a project as the analysis of a community's demands; the tabulation of the findings; the shaping of individual ultimates to form a supply for such demands, and the analysis determining the equipment necessary to fit the individual to function properly in his ultimate capacity, one fact becomes immediately apparent—namely, that throughout the Nation regional variances exist, and that these would modify any results obtained by such analysis.

The larger conglomerations of people in the United States, or in any other country, when viewed broadly, possess outstanding peculiar characteristics. These are more or less known even to minds of small compass the world over and serve to individualize a region. In America, broadly speaking again, each of its vaguely defined divisions possesses characteristics more or less peculiar to itself. Each division, in turn, splits into individualized sections, and these again divide into individualized municipal regions.

Occupational and industrial characteristics are unquestionably most important agents in individualizing communities. New York, Boston, New Orleans, San Francisco, St. Louis, Detroit, Chicago, and Pittsburgh among our greater cities possess reputations, each distinct. Travelers from foreign lands, superficially viewing America only from the rear platforms of observation coaches, have been impressed by these regional variances perhaps more forcibly than they impress the inhabitants. And yet, generally speaking, even to the native, the mere mention of a name is sufficient at once to call to mind the gross characteristics. Pittsburgh, for instance, standing as a center of the iron and steel trade based upon its underlying resources of coal, oil, and gas, has become known and characterized the world over by these particular industries. Such outstanding peculiarities of our American cities are based largely, of course, upon natural resources and geographical conditions. These factors are mainly responsible for our regional variances. Such peculiarities, for present purposes, we have chosen to term "the bents of communities."

If we proceed farther to analyze any given community with its individual bent we find that each unit constituting our municipalities has its own peculiar characteristics. In the community of Pittsburgh again, for instance, with its distinctly indus-

trial bent, we find Polish Lawrenceville, Italian Hazelwood, and Negro and Jewish Herron Hill. Pushing into the suburbs we discover that the individual peculiarities of such outlying districts as Homestead, McKees Rocks, and Etna are apparent to all as the first gross cleavage of the larger area known as the Pittsburgh cosmopolitan district. The same conditions in varying degrees obtain in all our municipalities the country over. In those areas of gross cleavage we find the peculiar bent determined largely by the tendency of the human family to congregate in groups having common interests, sometimes occupational but more often social.

Such an analysis as has been suggested in the preceding chapter would increasingly disclose these regional variances. Furthermore, if we analyze our communities on the basis of their bents, we are forced to conclude that any educational system, to serve adequately the interests of the given community, must perforce reckon with the special character or bent of that community. Our educational system of the past has consistently failed so to reckon to any marked extent.

An examination of the curricula followed by the public schools throughout the United States discloses that despite marked regional variances, similarity is their most outstanding characteristic. According to present views, in the large, those needs

which are considered necessary to train the mind and lead the youthful Bostonian to the greater happiness, are equally beneficial to the child who swings his books along the corridors of the schools in Sacramento. Our public school curricula, as they exist at present, appear to be the only universal panacea that the human mind has ever discovered. Nor does this similarity cease with the primary and secondary schools. University and college catalogues from East, West, North, and South exhibit few fundamental differences either in courses of study offered or in emphasis placed upon various branches. Those who hold tenaciously to the cultural decry this state of affairs. "This is an age of specialists," they aver. "The nature and complexities of our civilization demand specialists," reply the vocationalists. And even the most ardent advocates of the cultural concede that there is a grain of truth in the statements of the latter. But with all this concession, our educational institutions which aim to train either the cultural or vocational specialists have consistently refused to become specialized themselves. This situation is almost as paradoxical as that which we have already noted in the government of our universities, where we have autocratic organizations training citizens for life in a democracy.

If the increasing dependency of the individual upon his neighbors is making specialization a neces-

sity, surely regional variances and the bents of communities must be determining factors in this process of specialization.

Our educational system should supply not only the universal demands of the smaller units of which our populace is made, but should also supply the demands which exist for certain peculiar ultimates. These, obviously, in all cases could not be provided in each community, but each community could provide a supply for its peculiar demands. The function of a given unit would be to provide first for the demand which that unit has in common with all other units, and then to provide for as much of the special demands as the equipment of the unit and the unit itself could bear. For other special demands, a unit would perforce coöperate with its neighboring units, for just as the individual units of a community vary, so do the demands of the larger coöperating units differ. Regional variances and community bents, therefore, would not in themselves be the insurmountable obstacles which they might appear on first thought. Furthermore, it is conceivable that were we to depart from geographical lines and to congregate all communities on the basis of their bents, realignment itself would not be a complex process. Only when these smaller units of peculiar bent were welded into larger units of population would the delineation of the bent of the larger aggre-

gations require the most painstaking labor of those engaged in making the analysis.

At the present time there is more variety in our unity than there is unity in our variety, and while this is recognized, we have nevertheless endeavored to foster a uniform system of education which makes no marked attempts to recognize the demands which regional differences must place upon it. All things considered, it seems the essence of truth to maintain that the only uniformity possible in a national educational system must be in the methods of analysis employed: namely, the division of the Nation into regional or community units, and the subsequent subdivision of these into smaller units both for purposes of obtaining the necessary statistics concerning the community demands and for assisting various other active agencies which must operate in conjunction with the educational system, each in its way in proportion to its success, increasing the sum total of human happiness. Any uniformity other than this must, in the end, prove disastrous. Unity in variety cannot be secured to any marked degree until we thoroughly understand the variances in our unity and provide the necessary equipment for each regional unit and for each lesser unit that the larger unity may be secured.

CHAPTER VII

THE UNIT PLAN — A UNIT EQUIPMENT FOR A UNIT OF POPULATION

As has been previously pointed out, it would appear that the perplexities in the problem of analyzing the demands of a community would disappear were attention focused upon the smaller units of which the larger are but multiples. Among the first requisites, then, would be the determination of what constitutes the unit of population which can be most efficiently handled in order that the equipment necessary for the handling of such a unit might also be ascertained. The moment this discovery is made, the process of caring for the entire community would be a simple one, inasmuch as it would necessitate simply the duplication of equipment for the given unit of population to be handled within the given area.

The principle has been so long a part of industrial progress that it is surprising that it has not gained a greater influence in the general conduct of human affairs. Yet, when we realize that less than one half of the whole American Nation is under census study for such important occurrences as birth, mortality,

and disease, we understand how slow has been the progress of this simple economic precept even in the restricted fields of public health and welfare. At the same time it is equally true that only by the correlation of its smaller units can a nation obtain for itself the proper foundation upon which to reconstruct its future.

Once the size of the regional unit is determined, knowledge gained by an analysis of the ultimates would determine the equipment which the unit of population would demand.

Two requirements are immediately placed upon this primordial unit of population. First, it must measure up to a certain standard designated for all communities — a standard, however, varying as the progress of knowledge in the State of which the unit is a part prescribes; and second, because the given unit is one of the components of the larger, it must fulfill State, national, and international requirements. Furthermore, the unit should be allowed complete autonomy to raise itself to meet these requirements, and also to develop within itself all those features making for the fulfillment of the highest desires of the populace residing within its limits. This autonomy should extend to its undertaking of a union of its interests for rarer and rarer demands with its neighboring small units and for the carrying of these to the point provided by State

sanction. This might be furthered by a provision by the State of uniform methods of procedure, but here again uniformity should be tempered always by the revelation of its effects. There should run through the whole a saneness and an elasticity which would permit new communities to progress without too much domination and restriction by higher formulæ. Perhaps this form of organization with its resultant elasticity contains the secret of human welfare and is in reality but the application to our whole welfare problem of that departmentalization which has furthered the development of large business organizations.

One argument which has been advanced against the success of such a proposal is that an inordinate amount of trust in the members of the human family would be required. There can be but one answer to such an objection, and that is that if our educational system is not to provide a populace worthy of trust, since trust is essential to the greater happiness, the system is in itself futile. Some restrictions would of necessity have to be raised against unwarranted developments in order not only that neighbors might be protected from individuals, but also that individual units might be safeguarded against the encroachments of neighboring units. This could, however, we believe, be easily accomplished by prescribing certain fixed demands — standards to

which the individual units must rise in spite of all the autonomy allowed them.

Having arrived by an analysis of ultimates at the knowledge upon which to build a unit equipment for a unit of population, it would become necessary to proceed to the correlation of these smaller units again into units of larger and larger type. This process would inevitably carry beyond municipal limits, and in many instances beyond State limits, and ultimately even beyond national limits and boundaries,—for just as one unit impinges upon another, so one country impinges upon another; and finally, we might, with the simplicity of departmentalization which is evident in the proposal for a unit of population, arrive at a principle which would operate even through a period of internationalism which may be imminent.

It is conceivable that if we depart from geographical lines and congregate all the communities on the basis of regional variances and community bent, a realignment of the educational system and the providing of a unit equipment for a unit of population would not be difficult. As we have seen, no realignment could be justifiable unless a careful analysis of ultimate demands, and an equally careful tabulation of the analysis, preceded it. The resulting aggregations, however, could, we believe, be adequately cared for by putting into effect a reconstruction of

the entire educational system based upon what we have chosen to call "departmentalization."

Concerning departmentalization, since that proposal is dealt with more fully in a later chapter, we need only state here that by the term is meant not only the division of human knowledge into fields such as has been done to some extent already, but also the abolition of those arbitrary lines drawn across the educational system, without reference to the capacity of the student, which now separate the parts of the equipment which handle the instruction in the various fields. Were this done, the departments would in consequence stand continuously and without arbitrary time divisions from the lowest point of the system to the highest. We believe that in no other way can the requisite elasticity be gained. The elasticity resulting from such departmentalization would allow both complete freedom for the individual and for the bent of the larger and larger aggregations which would be correlated for the purposes of the community educational system.

A necessary part of the equipment for any given regional unit of population would be, of course, a university. And when one arrives at this part of the educational equipment which proposes to furnish the so-called "higher education" for the larger units of population, one is faced with the most complicated of all the problems of the educational plan.

The struggles to make our present university equipment fit the demands of the time might be amusing if the results were not so disastrous. The secret of the modern university's failure is undoubtedly in most instances this, that in no place has there been a realization of the fact that each educational institution is created for the purpose of fulfilling a demand, and that a knowledge of the knowledge demanded can only be found by a careful analysis of the ultimates required by the human family residing and fulfilling its life's function in the community. Each university, especially since it is the servant of the largest single unit of population in the country, should have, first, the requisites provided for it, and second, a knowledge of the bent of the community which it is to serve in order that its relation to other universities of the nation in which it is situated may be properly determined.

One objection which has been offered to this proposal has been to the effect that the existing institutions would be fearful concerning their own present and future welfare, and would scarcely welcome any plan which would in any way curtail their advancement. The reply to this criticism is that the present educational equipment is still far from adequate and the plan need, therefore, carry no fear to any educational institution where adequate reasons for its existence are found at present. The

results upon the institutions would be a sharper delineation of their regional functions in order that they might advance more rapidly than they have been advancing in the past. The staple community demands would remain as now, or would multiply in proportion as the population increased, and this tax upon the institutions providing the supply would continue as now. In addition, by following a peculiar bent, institutions would not only supply this staple community demand, but would supply for the rarer and rarer demands of the Nation. Their student bodies might, as to-day, be composed of students drafted from all parts of the United States and from all nations of the world. The principal difference would be, however, that the institutions would stand definitely as individualized instruments of supply for definite demands, rather than as general factories of supply for general demands. The gain to existing institutions would, therefore, far outweigh any small peculiar loss.

As has been pointed out, the demands of a community, when considered in terms of the human members, constitute individual ultimates. With all these ultimates the educational system has to deal. Each educational institution within the given unit would form a part of the unit's equipment. Each part of the unit of educational equipment for the unit of population would fit for certain ultimates. As the

aggregation to be served increased in size, the ultimates would increase in number and variety. This increase in the demand for ultimates might be natural and gradual, or, as often happens at the present time, rapid and unexpected. The founding of new industries creates a sudden demand for certain ultimates, which demand may not have formerly existed to any large extent in that particular community. Growth and demands alone could determine the amount of equipment which any unit would require. Increasing demands, whether gradual or rapid, could alone determine the necessity for additional equipment. Therefore, it would be impossible at present even to tabulate for any institution within any unit all the equipment required for the training of the members of the unit adequately to encompass their individual ultimates. Analysis alone could furnish this information — an analysis of all ultimates ranging from those possessed by individuals of lowest mentality to those elected by individuals capable of the highest mental achievement.

Neither can definite answer be made to the question, What constitutes the highest mental achievement? Here we are again dealing with a variable. A plebiscite of France has given the badge of honor to Louis Pasteur, whose contributions to knowledge ranged from those which resulted in the reconstruction of the silk and wine industries to those which

protected animals from chicken cholera and humans from rabies. Other groups would honor those eminent in government, in generalship, or in philosophy. The question is, of course, unanswerable. A retrospective examination of past achievements reveals but variances in judicial opinion concerning the value of each. But this does not in the least militate against the soundness of the principles proposed, for hope of higher achievements must be the promise of the future. It is to our happiness and advantage that the highest mental achievement cannot be defined.

The unit proposal — a unit equipment for a unit of population — is, therefore, none the less practicable because the farthest ultimates cannot be defined. Since all functions which the individuals of the human family perform, both in isolated and in communal existence, must be dealt with by the educational system, the plan admits of the widest application.

CHAPTER VIII

THE WIDER APPLICATION OF THE UNIT PLAN

In various quarters in the past the unit plan has received some attention. In the field of common school education, especially, the application of the principles has been attempted and the experiment carried farthest. And while complete success has not been attained, the results have shown the principles to be both sound and cogent.

The reasons for the partial failure in application here are easily discernible. In the first place, the full potentialities of the plan have never been perceived. Progress has, therefore, been more a groping toward the light than a steady march under a clear guiding idea. In the second place, the population to be served has always been too large for the equipment provided. And third, the existence of private invaders in the field, which prevented the exercise of arbitrary control, helped to balk the endeavor.

These private invaders were not necessarily hostile to the unit plan. It must be remembered that the idea itself was never clearly presented; also that the situation was complicated and the issue clouded by the seeming necessity for educating to some extent on the basis of class distinction and segregation. The

rise of the private schools was due in large measure to this apparent necessity and to the more important fact that the public schools were not equipped to function adequately. Private schools appeared because the need for them existed. They flourished and waxed strong as long as the need persisted. And they began to decline when the need for them began to diminish. That the need diminished and is still diminishing has been due primarily to evolution rather than to any fault of the private schools. As a rule, these institutions have upheld the traditions of the educational propaganda of which their own inception was a part. The causes for the decay are to be found rather in the growth of the whole system of compulsory education; in the discovery that only by general taxation could the equipment required to handle education be provided; and in our willingness and ability to submit to such taxation. Thus have public schools been improved, and thus have the private schools been forced to take a lower and lower position. They can no longer be considered as serious competitors for the leadership in education.

The private schools appeared before the unit plan for education was seriously promulgated or the principles involved clearly grasped. They have failed to maintain their position because, to a certain extent, the way to coöperation with the regular forces in the field who were struggling with the unit idea was not

made clear. Many of them are still failing to discover the position which yet, by right of function, belongs to them, and are, by constant curtailment, striving to postpone the day when bankruptcy shall forever close their doors. Others, more progressive, have attempted to attach themselves to universities as preparatory institutions. The course pursued in either case is largely determined by their inability or ability to see that the complete application of the unit plan — the idea which is growing — would not necessarily spell doom for all private educational institutions. Private schools may and probably will continue to exist without injury to the educational system or harm to the unit organization as long as there is existent a universally applicable law of social distinction creating demands to be supplied. The way to new life leads through correlation and adjustment; the way to death, through competition. The private practitioners cannot compete with community provision beyond the seventh grade.

As we have said, the principles of the unit proposal have been those applied in the developing of common school organization, and despite the inability of organizers to see the full potentialities in the plan, the principles themselves have been proved sound. Attempts made to widen the application, however, to other parts of the educational system have largely failed. And because of the failure, such

gross wastes as exist in many of our municipalities at the present time have resulted.

In the higher fields of education stronger privately endowed invaders have appeared, many of them better equipped to carry on the work in certain fields than the publicly endowed occupants. Usually when the application of the unit principle has been attempted in such cases, it has been frustrated by personal ambitions reinforced by traditional opinion that priority of occupancy in any field of educational endeavor, regardless of inferiority of equipment, constitutes sufficient reason for refusal to retract.

Particularly is this true in Pittsburgh, for example, where such an influence has been most potent. Upon one side of the street there exists a large endowed institution which vies for students and competes with a large semi-state university across the way. Great waste here caused by duplication of courses and equipment has been most apparent. Attempts to apply the principles of the unit plan by adjustment and correlation have been made, but have thus far proved futile. Even the most noteworthy of these — the investigation carried on by Professor C. R. Mann, a comparative study of the University of Pittsburgh and the Carnegie Institute of Technology — came to naught.

In the report which Professor Mann made, par-

ticular emphasis was placed upon wasteful duplication. And since the situation is, in reality, general rather than local, it seems advisable to quote a few paragraphs from the "Mann Report" as revised May, 1915: —

A study of the lists of subjects of instruction at the two institutions shows that the most serious duplication of work at present occurs in the more advanced courses in the engineering schools. Here both institutions give work in highly technical subjects to relatively few students.

It is, however, evident that there is soon going to be serious duplication in the teachers' courses in manual arts and domestic arts. Both institutions are now engaged in building up very similar courses in these subjects. Both are also developing teachers' courses in fine arts and music.[1]

And again on a later page: —

That there is considerable wasteful duplication at present is shown by the fact that at the University last fall, out of 66 courses being given in the engineering school 31 had less than 10 students each. At the Institute this year there are 18 classes out of 186 with less than 10 students each, and 32 more with less than 15 students each.[2]

And Professor Mann concludes: —

The considerations thus far presented show clearly that at present there is wasteful duplication of work in the last three years of the engineering courses. These fields of instruction now offer opportunities for useful coöperative effort.

[1] *Mann Report, 1915*, p. 8. [2] *Ibid.*, p. 17.

Both institutions are now trying to develop teachers' training courses in fine and manual arts, domestic arts, music, dressmaking, and the like.

At present the University has a department of education for this purpose, but very inadequate equipment and facilities for practical work. The Institute, on the other hand, has splendid equipment for practical work in these subjects, but lacks a well-coördinated department of education. Coöperation in these fields would therefore seem to be particularly desirable before further wasteful duplication begins. Neither school has any practice school of its own, but both give prospective teachers experience in the public schools of the vicinity. Under these conditions it is difficult to see how either school can make any very serious contribution to the solution of the pressing problems of industrial education. . . .[1]

If the Institute and the University could, by friendly consultation, bring their work in this field of activity into helpful coördination, not only would it result in the immediate strengthening of both and of the city school system, but also Pittsburgh would soon become a center of educational investigation and enlightenment second to none in this country.[2]

Painstaking as was Professor Mann's study, and clearly set forth as were the evils in the few paragraphs which we have quoted, little or no adjustment or reconstruction resulted. And the two preceding volumes of the report of the survey of the University of Pittsburgh furnish ample proof that the waste and duplication still go on at this later time. And this condition is true in any number of other com-

[1] *Mann Report*, 1915, p. 18. [2] *Ibid.*, pp. 20, 21.

munities in America and testifies to the need for the fullest application of the unit plan.

In fact, the application of the principle of a unit of equipment for a unit of population which has been herein promulgated, if made consistently to the educational system, is applicable to all institutions which have to do with the provision of education for the individuals of any community in the Nation. Furthermore, so great are the potentialities in the idea that the same principle will apply in the solution of all problems which concern themselves with human welfare, since welfare itself is dependent largely upon the spreading of knowledge and the increasing of the capacity of the race to understand how living conditions and all factors which make for the bettering of community health are conjoined with the general development of the human mind. Especially is this principle applicable where a paternalism must be exercised by the State in protecting individuals against their own ignorance and against the mistakes and invasions of their neighbors.

A specific application of this in the field of public health will perhaps more clearly explain what is meant.

There are a number of maladies more or less generally affecting the human race. These vary somewhat with regions, size of community, poverty, and state of civilization of the district. It may be that

the whole group of infectious diseases, — common colds, bronchitis, measles, mumps, scarlet fever, whooping-cough, — the social diseases, — syphilis and gonorrhea, — and other parasitic diseases, such as tuberculosis and pneumonia, are common maladies of the human family and necessitate attempts for uniform care, inspection, and provision by a government actuated largely by the spirit of paternalism. The same provision is necessary also in dealing with such biological problems as infant feeding and maternity, care of the teeth and the eyes and various physical defects. Responsibility for the care of these has, in the past, been assumed, as a rule, largely by voluntary organizations and has been accepted by the Government only in a more or less perfunctory way, drastically or leniently, according to the character of the administration, with little thought given to the equipment necessary.

The great evil in our system at present is unquestionably the maladaptation of the equipment to the demands. The equipment has no elasticity and in no satisfactory way meets the existing conditions. We believe that in all these problems the application of the law of a unit equipment for a unit of population would dissipate most of the trials of modern government. Especially would this be true, if a degree of local autonomy were allowed the unit in the utilization of its equipment. For instance, with the dis-

appearance of one malady, the equipment for that might readily be used to supply any new demand which might make its appearance. At present it is not uncommon to see institutions struggling to keep their heads above water long after the specific thing for which they were created has ceased to require their services. In one large city a beautiful smallpox hospital lay idle without occupants because the demand for the place for smallpox patients had, as a result of preventive measures, ceased to exist. At the same time there was the most pressing demand for the buildings to house far advanced consumptives. However, because the money which paid for the erection of the hospital had been demanded for a specific purpose, three years were required to impress a stupid city government with the necessity for using the smallpox hospital equipment for tuberculosis.

It is quite conceivable that the equipment for all public service in connection with these infectious diseases may, in the future, be closely associated with and may be a part of the common-school equipment for a given unit of population. The inauguration of school physicians and school nurses, school provision for food, bathing, and inspection of teeth, all point to a future amalgamation of these two important equipments. And, indeed, where the application of the principle has become most significant in its operation it seems but a step to the complete amalgama-

tion of the service for family supervision and school management. The smaller detail of provision of physical equipment for the handling of this service is a matter only of secondary consideration, since it entails only the expenditure of moneys. Were this amalgamation brought about, the necessity for more than one statistical study of the district would be obviated. Where child life and family sickness are so intimately associated with such supervision as occurs in school life, the necessity for such an amalgamation, aside from being the likely result, at times presents itself as so pressing a demand that one wonders why it has not before this become a universal expression of the intelligence of the Government. If we were to apply the unit principle to all matters of public health and welfare, we should provide, on exactly the same basis as we supply to-day our common school for the universal education of the children of the unit of population, an elastic organization which would provide efficiently and uniformly for the care of a given group of people

Perhaps the smallest unit of population in the whole unit system would be formed for the purpose of caring for such maladies as have been mentioned above. The plan would necessitate the securing of complete and efficient knowledge of every household and room and their human contents throughout the region over which supervision was exercised. This

unit would conceivably correspond in size more or less to the common-school unit of the present time, and as in those units, so in the case of public health units also, there would exist a necessity for correlation into larger and larger units for universal demands.

Pursuing the thought a bit farther, we come to the more or less rarer demands in the way of human sickness. For example, cancer, chronic cardiac, arterial, and nephritic diseases, various operative procedures in the field of abdominal and pelvic surgery would naturally require sparsely distributed equipment to provide for them. It is conceivable that the equipment might correspond to the high-school grouping. And the still rarer demands which may be exemplified by nutritional and metabolic disturbances and rarer operative procedures might be fittingly provided for by an equipment analogous to our colleges and universities.

Furthermore, wherever we touch the problem of human welfare, we find that it is becoming naturally more and more intimately associated with the educational and research activities of the community and must, if we read the tendencies of modern times aright, be a part of the general equipment necessary for the protection and evolution of the human race. Therefore, as part of the equipment provided for this field of public welfare, there would be, first of all,

a research institution maintained by the general funds. To this could be entrusted the task of discovering new knowledge.

While this principle is just as applicable to health as it is to education, it is equally applicable to charity, housing, family instruction, food inspection, and many other endeavors for human betterment which are struggling for expression in local, State, and national organizations. In short, we believe that the plan, if applied, would prove to be the strongest agent yet discovered for fitting communities to take their place in national and international relationships.

In conclusion, it must be said also that while a number of local applications have been made in various communities, the principle cannot be applied on a very wide scale until it becomes a part of the governmental control of communities. Such an experiment, as has been outlined in the "First Survey Report of the Dispensary Aid Society of the Tuberculosis League of Pittsburgh, — an Intensive Study of Eight City Squares," published in 1916, gives ample proof of this. CARE MUST BE TAKEN ALSO, AS HAS NOT ALWAYS BEEN DONE IN THE PAST, TO MAKE SURE FIRST OF ALL THAT THE UNIT TO BE HANDLED BY A GIVEN AMOUNT OF EQUIPMENT IS NOT TOO LARGE. WHERE UNIT EXPERIMENTS IN PUBLIC HEALTH HAVE FAILED OR ARE FAILING, THE

CAUSE FOR FAILURE IS TO BE FOUND IN THIS, THAT THE UNIT CHOSEN TO BE SERVED BY THE GIVEN EQUIPMENT IS NOT SMALL ENOUGH. The whole matter, furthermore, is a principle inherent in the broader principle of municipal autonomy.

CHAPTER IX

CORRELATION — THE UNIVERSITY UNIT, ITS STRUCTURE AND GOVERNANCE

In attempting to suggest the practicability of a wide application of the unit principle to fields which are not primarily the concern of this study, we have traveled a little aside from our main course. In pointing out that, having arrived by an analysis of ultimates at the knowledge upon which to build a unit of equipment for a unit of population, it would become necessary to proceed to the correlation of smaller units into units of larger and larger size, we have overleaped an important step in that course. Therefore, it now becomes necessary for us to return to our special field and to consider this omitted step. Especially is this necessary because the means in large measure determine the method, and before we can proceed to argue methods of correlation, we must carefully determine the agent to be employed, or, in other words, before discussing methods we must ascertain where the analysis of ultimates, in any large community which undertakes to rebuild its powerful educational system, should begin.

As has been pointed out, the ultimates of communities differ materially as do the communities

themselves differ in their bents. These variances, and the fact that furthermore the larger communities differ in their composite mental attitudes toward various subjects which are proposed to them, complicate the task of choosing the proper agent. In a later chapter the suggestion is made that a Municipal Foundation for the Study and Advancement of Community Education would be the fitting governor of the agent chosen. And also because of the educational nature of the task which the agent must perform, it would seem wise to suggest also that the agent itself should, in most cases, be the university, and that the foundation should find residence within the institution. This arrangement would seem most practicable because of the fact that within the university the most complex ultimates are dealt with, and also because of the position which the university theoretically, if unfortunately not in fact, occupies.

It is fair to conclude that if a university possessed a clean-cut conception of its function and took for its object the increasing of the sum total of human happiness of all members in its contributory community, and attempted under systematic leadership only those things which pointed directly to future betterment, preceding such attempts always by cautious education following a most painstaking analysis of ultimates, the community itself would in time become the most perfect building unit not only

of the future nation, but of a possible future international world.

While it is thus conceivable that the university might be the agent in one community, it is also possible that in another the city government might be best fitted to act in such a capacity, so greatly do groups for service in different communities vary because of the conception, outlook, and vision of those in leadership at different times. In other communities such an organization as the Chamber of Commerce or one or another of the various social organizations might be chosen as the agent of the foundation. Regardless of residence, however, were our agent to undertake the task of analysis partitionment and correlation, the beginning must, perforce, be an educational one. As time went on, the institution performing such a service might find it advantageous to turn over the function, which temporarily it had assumed, to the Federal Government or to the government of the community or communities which it purposed to serve. Whatever organization were selected for such a task capacity for leadership would, however, inevitably be a determining factor. The assumption of educational reponsibility by any one group at any given time in the past has adequately demonstrated this. Eventually this function suggested might reside in that body which has the autonomic power in any given region,

and this power would, of course, be delegated in its fullest application to those smaller and smaller communities forming larger and larger aggregations.

For present purposes, no matter which organization undertook the task here outlined, the principle would be found to work through the larger and larger correlations for coöperative purposes until the division of the nation into a number of units would be reached. If again the university be chosen as the agent, these divisions might fittingly be termed "University Units." It is conceivable that perhaps our largest educational unit would be the university unit so named. Applying this university unit plan to the nation, we would then have the United States finally composed of a given number of university units adequate in number and equipment to meet the demands of its population. The boundaries of these units would not be confined by any present municipal or State lines, for upon each university unit there would be a special demand which would determine in large part the special character of the institution. Each university unit would have as its basis in the final analysis a group of building units of population provided with an equipment sufficient to meet the universal demands. The bent of the community also, since it in a large measure determines the demands or the ultimates, would

also determine the character of the members of the educational system operating within the unit.

The character of the entire educational system would receive a certain bent. Not only this, but definite bents which might not be generally applicable to the whole system might be given to individual departments. For example, tropical diseases might furnish opportunities and might shape the bent of medical departments in southern universities, but would have no determining influence upon the bents of university units located in other climates.

Confining our discussion to the problem of correlation in a single university unit, we begin with the consideration of a unit equipment for educational purposes. Each university unit would have as its foundation first of all an equipment adequate for the provision of primary education necessary to supply fully the unit of population contained therein. Each unit, which at the present time may be curtailed by existing municipal, county, or State lines, would eventually disregard any such arbitrary divisions in order that uniform provision for the entire population might be accomplished. Each of these smaller units would have as its duty, in common with the larger units with which it was correlated, the attainment of prescribed standards below which it might not fall.

In Chapter VII, it will be remembered that we

have already pointed out that one requirement which would be immediately placed upon the primordial unit of population would be that it must measure up to a certain standard designated for all communities. But it must also be borne in mind that this standard would vary as the progress of knowledge in the State of which the unit was a part prescribed. This prescription by the State has come in modern times to be a prerequisite for an educational system, be that system correlated or dissociated, and inasmuch as the success of the unit plan would in large measure depend upon the amount of correlation obtained, the establishment of such a prescription and the filling of the same would become necessary to the full application of the principle itself. In other words, it would be necessary for the State to determine a minimum standard below which no educational institution might fall. The degree of efficiency and progress above this elemental standard of State prescription which each smaller unit might attain would largely be determined by its unit of equipment or the amount of autonomy granted. Progress would be marked from time to time by the gradual raising of standards set.

In the future as in the past raising of standards would be based upon the progress exhibited by the best communities. We have already seen that the

progressive community which resulted from the establishment in the town of Gary of an individualized plan of education has already caused States and communities to modify their standards in accordance with the knowledge gained by this experiment in an Indiana town. The model school experiment actively under way at the present time in Teachers College at Columbia University under the auspices of the Rockefeller Foundation, if it should prove successful, would facilitate still further changes in standards, all of which would mark a point below which no community in the future might fall. And so we progress. As each community attained the prescribed standard it would be necessary to begin the application of autonomic privileges, the reckoning with the influence of community bent and the assumption of responsibility in the given area to pursue in the best way the educational methods best adapted to the population resident therein.

Having secured local autonomy in the matter of primary education it would become necessary next to approach the more difficult problem of bringing together individual units to form the first correlation for secondary educational privileges and attainments. By virtue of the State or Federal law under which autonomy the primary building units would operate, there would of necessity be what has been referred to a number of times in the foregoing pages,

a careful analysis of the population to be served by each educational unit and the provision of some central office in the foundation to which the results of such an analysis might be sent.

A tabulation of these various analyses would form the first basis upon which our given units might jointly operate. Those units would first of all be correlated for communal secondary education whose demands and bents showed the more striking resemblances. The building equipment would be determined largely by the demands of those seeking correlation. In the same way, by bringing together a number of secondary-school units, the various secondary-school regions would be correlated for higher education, and so on until provision had been made for the demands of the entire population within the university unit — i.e., for all who leave the educational system at different points, not merely for that percentage of the population which finally makes its way into the halls of the university itself. Those leaving the system at any low point would be prepared for the function which they had chosen to fulfill. Those reaching higher parts in the system would be drafted into them by a careful study and tabulation of the demands in the entire community. Furthering this correlation, we suggest in later chapters a delineation of courses and departmentalization.

Were a nation divided into university units, the government would early become a problem for consideration, for government as well as structure is a factor in correlation. Our national experiment in democracy has taught us the necessity for providing an impartial supreme judicial body forming a tribunal before which vexatious partisan difficulties may be tried and adjusted. And there is no reason to be skeptical concerning the beneficial influence which such a body might exert were one formed at the apex of our educational structure. In fact, we believe that the whole educational system for a given university unit should have above its administrative machinery such a body, corresponding in many characteristics to the supreme bench of our judiciary, before which arguments concerning questions arising between administrative pronouncement and individual community rights might be presented. Such a protective body has always been the safeguard of democracy, and it is reasonable to suppose that such a protective body might equally safeguard the higher educational interests of communities.

The function which such a body would perform has been filled at times in the past by trustees of universities, but, alas, more often than not boards of trustees have functioned not as courts of justice, but as committees of interference, upholding injustice and autocratic power. A supreme court such as is

here proposed, it must be clearly understood, would have no administrative function whatever in connection with the university or with the university unit. It would merely be, to repeat, a supreme jury before which arguments for justice might be presented and by which the evil of autocracy — perhaps the greatest in modern university life, forbidding as it does redress both for students and for faculty — might be prevented.

The members of this body should be appointed for a definite period of time. A seven-year tenure of office with the impossibility of self-succession would more nearly approach the successful expression of man's judgment in this matter than either life tenure or a shorter period with the possibility of self-succession. The present traditional assumption by college and university presidents that their tenure of office extends for life, or until such a time as they may be able to retire as beneficiaries of the Carnegie Foundation, is an additional influence working against satisfactory progress. One might be unusually successful in the fulfillment of his office as a member of a supreme judicial body, but if this were the case, other opportunities would be open to provide for the expression of such usefulness after the member's period of service had expired by periodical termination of tenure. Only by such methods could the judicial body be safeguarded against senility

and that scarcely less degrading evil, degeneration, the natural and inevitable resultant of inbreeding.

The members of this supreme court of education might be appointed by the active administrative body of the university unit immediately below it in grade. This matter of appointment, however, will become clearer as the plan for the municipal foundation is unfolded. This additional fact is evident, that the judicial organization should be composed of not more than seven members, two retiring at the end of two years, two retiring at the end of four years, and three retiring at the end of six years, and so on thereafter. This method of retirement would preclude the possibility of packing the court and would retain it as a definite supreme body which would have, in common with all supreme judiciaries, justice as its stay.

The determination of an administrative body for the university unit would be the next object for consideration. And this process would undeniably be fraught with extreme perils. Here, for guidance, let us recur again to our analysis and ask frankly, What groups have the right to representation in the government of a university unit? Here again also we must recall that of all places for the exercise of democracy, since education is a prerequisite for successful democracy, a university unit of population must be the place most fitted for the experiment.

Theoretically the laws of democracy ordain that all the population may participate in sovereignty; that all those affected by, living under, and sharing in the benefits of, this form of government shall be entitled, through representation, to participation in the councils of government. Clearly, then, democracy applied to the educational system would order that all those affected by the system are entitled to some representation in the democratic educational councils. And the bodies so affected are, of course, first of all the students under instruction in a given university unit, second, the faculty offering instruction within the same division, and third, the parents of the children.

We are at once faced with the truth that the student body of a university unit merits consideration. A student's right to representation is unquestionably based upon two facts: first, that he is the party most concerned, and second, that he is a member of the majority. The student body has a right to consideration, not alone because it constitutes the largest single group within the walls of the university, but because of the fact that the university unit itself was constructed for its instruction. It would be impossible for any one to-day to say just what power of representation should be given to this mass. This fact, however, is evident, that student power, stimulated by experiences gained through lower insti-

tutions through which the students have passed, has been growing apace and the right of students to representation is becoming more and more apparent. It may be even true that the day is near at hand when the admission to the councils or government in our educational system must be granted frankly and freely to chosen representatives of the student body. Nor is the admission of such representatives fraught with any particular danger. Maturity determines the right of franchise in other human affairs. Maturity may not be a just basis for division in educational affairs, but maturity has equal rights. Nor is it at all certain that rights of representation do not exist among those not yet arrived at maturity. At best this problem is a complicated one which only time and study can satisfactorily resolve.

Evident as are the rights of the members of the student body to some representation in administrative educational circles, even more clear are the rights of the members of the faculty to representation.

President Schurman, of Cornell University, succinctly indicated this right and advocated the idea of professional participation in government and control of the universities when he said: —

> What is needed in American universities to-day is a new application of the principle of representative government. The faculty is essentially the university; yet in

the governing boards of American universities the faculty is without representation. The only ultimately satisfactory solution of the problem of the government of American universities is the concession to the professoriate of representation in the board of trustees or regents, and these representatives of the intellectual, which is the real life of the University, must not be mere ornamental figures; they should be granted an active share in the routine administration of the institution.[1]

As long ago as 1912 this recommendation was made that Cornell should lead the way in the further democratization of American universities. And last year witnessed the election of three members of the faculty of the Ithaca institution to the board of trustees. In fact so much progress has been made recently in the securing of faculty rights, and so much momentum has been given to the successful furthering of the campaign by this action of Cornell, that we need only mention the conflict in passing. Faculties have within their hands at the present time, in many of the better informed institutions, much that they have been struggling to secure, and the need for more adequate faculty representation on higher councils is increasingly gaining recognition.

The rights of the parents, who are also the taxpayers in the community, to representation in

[1] *The President's Report, 1915–1916. Cornell University Publications*, vol. VII, no. 17, p. 6. (Cornell University, Ithaca, New York.)

higher councils have not, up to the present time, been largely agitated. Their rights have, to a certain extent, been neglected because of their own failure to insist upon any marked representation. In the mass they are naturally not conversant with either the details of the system or the problems which must be solved. Present tendencies, however, indicate that the day of the domination of the professional educator over the practitioner in fields of education is passing. If the signs be read aright, it is only a matter of time before there will come a recognition on a wide scale that the practitioners themselves are best fitted to say what should be served up as education. Not much longer may the theorists arbitrarily ordain that the practitioner must take this or that or the other dose. And as this conception of the vital rights of the practitioner grows, there will come an increasing demand that the general public of taxpayers, composed as it is of practitioners, is entitled to important voice in the administration of the educational system. While this is certain, it is also true in regard to the taxpaying public of practitioners that the larger that public the more unable it is as a body to administer, and it must trust for actual administrative guidance to elected representatives who are intimately associated with the control of problems. Probably in its actual administration the most just representation would be in the

nature of a proportion of the administrative body which would return to the taxpayers themselves the information helpful in the formation of their better judgment. When the time arrives that the voice of the practitioner is heard and heeded to the extent of shaping formal education to meet the demands, the shaping of the system in itself will afford ample justice to this long unrepresented body.

In dealing with the university itself, which forms but a part of the proposed future educational unit, another group, which, in the past, has been most influential, must be reckoned with. We refer here to that group which has previously received its educational training in the institutions of higher learning. This body, now known as the alumni, is scarcely entitled to the unbounded privileges which it now enjoys. These privileges were born of the necessity for safeguarding the interests of American colleges and universities against the uneducated mass at a time when education was not so widespread as it is at present. Privileges of sovereignty were also the rewards for pecuniary assistance. So universally has this been the case that it is small wonder that alumni have come to look upon such sovereignty remuneration for monetary aid as an almost inalienable right. Nothing could be farther from justice than this. To-day the individual who gives is alone favored by the privileges of giving. The recipient,

by acceptance, honors rather than is honored. Education also has become more diffused and the masses no longer constitute a menace to the welfare of educational institutions. Alumni domination based upon protection afforded is no longer either necessary or equitable since the necessity for protection has been removed. In fact, it is even a moot question if universities have not lost more than they have gained by the security afforded. Certainly the benefits have been doubtful ones. Under our present system alumni control is a menace, and were the unit plan adopted, alumni would be entitled to no more representation in educational councils than would any other members of the community. They are, in reality, but a part of the greater public which a university must serve.

The position of the university in the proposed system would raise still another question necessitating the further application of the principles of democracy. For a university under the unit plan would as now require a head, a president, or a chancellor, as the case might be. In the past the selection of this officer has been made by boards of trustees in consultation with the alumni representatives of the institution. It would seem, however, that the leader of a university might properly and safely be elected by heads of departments; not by heads of departments as departments exist at the present time,

but rather by heads of departments as departments would exist if the whole educational system were departmentalized in accordance with the highest ideals of community education. A proposed plan of departmentalization, which will be presented in a later chapter of this volume, will clarify this method of election by heads of departments.

CHAPTER X

THE MUNICIPAL FOUNDATION FOR THE STUDY AND ADVANCEMENT OF COMMUNITY EDUCATION

UNQUESTIONABLY the proper agent to further the cause of education by systematic analysis and reorganization of the educational system would be the Federal Government. History has, however, taught that only as a project proves feasible is it accepted and made the recipient of Government patronage. The Government, even if it would accept the task, has been, because of the rights of States, largely deprived of its right of initiative in such matters. Individual States, existing before the Union, have, in the matter of education, retained jurisdiction within their own borders. The inaugurations of projects, more or less experimental in nature, especially in the field of public education, have therefore not been a part of Government practice. In lieu, then, of the proper agent, in order to carry out such a plan as is suggested in this volume, it would become necessary to turn to other quarters and to depend upon voluntary rather than upon governmental aid.

Because of possibly justifiable conservatism on the part of the Government, the most feasible way

of making a beginning at systematic reconstruction would be through a competent, voluntary group of men who would have, in addition to their appreciation of the significance of the task undertaken, the funds with which to carry the project to fruition. Such a group assuming such a trusteeship we have chosen to name a Municipal Foundation for the Study and Advancement of Community Education.

Thus far the suggestion is scarcely a novel one. Precedent is not lacking both for individuals and for groups. The Rockefeller Foundation, the Sage Foundation, and the Carnegie Foundation all stand as examples of monumental, individual, voluntary acceptance of composite social responsibilities, and the Cleveland Foundation for the Administration of Charity is an excellent example of group acceptance of the responsibility to further the interests and welfare of community life.

Meritorious as has been the work of these large foundations in the field of general education, a careful scrutiny of the publications describing their activities has led to the conclusion that in all of them vital weaknesses exist. They have endeavored and are still endeavoring to operate on a national scale, and although few years have passed since their inception, so varied are the peculiarities which have to be reckoned with, and the demands which have to be provided for, in the vast number of communities

composing this Nation, that they have already become overburdened to such an extent that not even their enormous wealth of resources enables them more than to scratch the surface. However, this additional fact is, we believe, true, that the principle involved in the establishment of a foundation, were it applied in such a way as to make the task to be fulfilled bear a direct relation to the funds and equipment available for that task, would probably furnish the key to the secret of successful accomplishment in chosen fields of endeavor.

Perhaps the vital contribution of foundations up to the present time has been the introduction into the educational field of the idea of experimentation and the suggestion that progress in this most important realm of human endeavor is not impossible. The most recent of foundation experiments, the new model school founded by the Rockefeller Foundation in Teachers College, Columbia University, has already been mentioned in these pages. This experiment, in common with many others, however, if one may judge by the published material available at the present time, contains great elements of weakness. The two most significant of such would seem to be, first, the lack of a control experiment, and, second, the lack of carefully analyzed needs demanding fulfillment. A prerequisite for all experimentation in laboratory work to-day is a control experiment. This

is as essential as the experiment itself. This model school experiment in the midst of a large community such as New York, drafting its pupils from wide areas, assembling them from all members of all communities of widely varying bents, yet made without reference to community life, may be largely invalidated by its susceptibility to criticisms which might have been avoided if the simple principle of unit autonomy, a unit of equipment for a unit of population, were applied in the beginning.

The foundation which we would suggest, therefore, would be not a national one, but a municipal one; that is, a group of men who would voluntarily undertake the task of analyzing the demands or the ultimates of a given community, gathering knowledge as a preliminary to the establishment of a firm foundation upon which to reconstruct the educational system. That is, we believe that the application of the foundation idea to a community is in itself a suggestion worthy of immediate consideration. In other words, we believe that the formation within a community of a voluntary group who would undertake the financing of the gross analysis of the ultimates of the community in which the foundation existed, and who would month after month and year after year furnish the community with knowledge upon which its educational system could be fittingly remodeled, and who would consider all existing in-

stitutions and the functions which they could best perform for the community, and the final gross correlation of all offices which in the large exist only for the community which they serve and of which they are a part, would mark the beginning of a new and happier community existence.

Inasmuch as the most difficult problems which would be presented to such an investigating body are those which involve the products of the higher educational institutions in the community, the most fitting place for the municipal foundation to begin its work would be within a university. If the university in any community were not fitted to receive the foundation as an intramural correlating agency, the first task of the foundation would be to exert all its efforts to raise the university to a high plane. This, because it has been apparent throughout the progress made in education that a most important single factor has been the improvement and demands of higher instructional institutions operating upon lower educational groups that have been forced by necessity to meet the requirements imposed from above. Because of this it is safe to believe that if the foundation could begin by enhancing the post-graduate opportunities in a community, the whole educational system would rise to meet new and higher standards. And within the post-graduate school the foundation could fittingly find

residence and there receive in its labors the aid of all students who had pushed on to this advanced part of the system.

We believe that it may be said without question that, starting in those fields of higher learning that have been attained by individual endeavor, the investigators would find the proper place by analysis to push aside obstacles which exist in the lower educational strata and tend there to produce that stagnation born of satisfaction so inherent in the mass of the human family. While we believe also that our analysis of conditions has led us to what is the rule, we do not believe that it is the invariable rule, for many instances of progressive organization and advancement have occurred in communities where men have become interested chiefly in primary and secondary education. Investigation would tend to show, however, that these are largely exceptions, and that as a more or less constant rule primary and secondary schools rise to meet requirements of higher educational institutions imposed from above rather than for the impetus of any force generated from within.

Wherever the foundation found its home, its duty would be to bring the institution in which it has resided into such a position as would favor its rendering trustworthy service to the community. And then day by day thereafter to seek, on the sure foundation

of analysis of ultimates, to improve weak parts of the educational system and correlate groups having affinity for each other, to make elastic the whole educational system, and finally to evolve for the community served by the institution — which community would in the long run be a national unit — a system of education elastic enough to keep pace with the progress of knowledge and sane enough to retract when the demands for any given ultimate disappeared.

The performance of the task of the foundation would not be one in which any great rapidity could be gained. Patience and continual education of the community would be required. Moreover, progress toward success would require that the publications of the foundation be so thorough as to inspire trust in the undertaking by gaining immediate recognition of their meritoriousness and that those in charge ever keep before themselves the ideal of elasticity. Furthermore, a foundation would be required to remember that as it enlarged its field of endeavor, it would come in contact with, and impinge upon, its neighboring units, and that in addition to its community service it had a function, conjointly with all other foundations, existing for higher fields of achievement than those of local university interests, and that all would be busy with the one task of forming a nation which might in the future

take a dominant part in a possible international society.

Naturally, just as every aggregation of men proposing to supply a demand faces, as a primal necessity, the choice of a manager for the task which it has at hand, one of the first needs of a foundation having such an aim would be a leader. After the leader has been secured, however, if all were stimulated by the same vision and if sympathy furnished the impetus to every endeavor, all would work together to provide the best for each community in which the operation was to take place. Were this to happen, we believe that, despite the tremendous difficulties which would of necessity be at first encountered, common sympathy and able leadership would insure progress.

In regard to progress it may be said that revolution is probably not a requisite, although progress may at times have resulted from it. Always, however, revolution has carried in its wake the sad results of the travail of many who have become involved in its toils. The eradication of certain false prophets, who have gained power because of the common ignorance of the demands of the community, could, we believe, be accomplished by other than revolutionary methods. The withdrawal of such agents from the field would be an early necessity, for all those working for selfish ends, and often-

times for theoretical ends not based upon an analysis of demands, ever place experiments under a disadvantage.

In the case of this proposal, as in the case of all new plans, many may be skeptical and fearful because the ramifications can be but vaguely outlined. Obscurities are ever deterrents. Yet in the present case, since the lines of progress are clearly and definitely apparent to all who will take the time to start upon the journey and pursue it to the end, we believe there is small cause for fearfulness. A daily disclosure of the details at present obscure, a daily reduction to order and system as they appear in increasingly stronger light, would soon clear away the clouds which, at first, seem impenetrable. Certainly the end to be attained would make the struggle, no matter how difficult, increasingly of worth. No greater contribution could be given to humanity than the exemplification of the truth that the greatness of a nation, the goodness and equitability of its government, and the provision for the people who form the building unit are wholly bound up with the educational system of the communities which form the nation. And the first step in this direction would be the acceptance of the task by such a small group as has been suggested; a body making their function and duty the gathering of knowledge of community ultimates, and by the in-

sight thus gained, to point the way to future reconstruction.

At its inception such a body as the proposed municipal foundation organization would need no administrative power. Later, however, the wisdom with which each foundation carried out its purpose would ultimately determine the amount of authority which could be safely granted to it. It is conceivable that in time a foundation might exercise the power at present vested in numerous boards of trustees. Unquestionably that body of men with whom resided the most careful analysis of demands and facilities for any given unit of population would form the safest repository for the entrusting of appointments to all institutions operating within the district. To this board, if authority were in the future granted it, there would be elected representatives of all the interests resulting from the departmentalization of the system of education of the whole university unit. Service rather than power, however, should be the ideal for the group. The immediate necessity would be the gathering of knowledge for the given unit by analysis and tabulation of results obtained, and the doing well of the work which to-day is attempted in a small and perfunctory way by many scattered governmental and voluntary agents, of making intensive studies of units of population which are to be directly served.

The history of the past is indicative of the fact that the careful study of the small group is often accepted and made a powerful influence in determining the policy for a larger aggregation of which the group under study was but a part. A survey of the attempts of the Federal Bureau of Education and of the endeavors of the various large foundations reveals the fact that in each instance each of these organizations is striving to determine definitely general principles on the basis of small studies. The report of the Commissioner of Education is in essence an analysis of local studies. The reports of the special foundations likewise exhibit a similar attempt to project principles on similar bases. It may be that the hour has not yet arrived for the acceptance and acknowledgment that intensive study of units of population, carefully analyzed and tabulated, must be at the foundation of any future proposal of universal education. However this may be, we believe that that time will sooner or later arrive. And when the hour is ripe, we believe that the feasible method to employ would be to select university units scattered over the United States which could, in the first rough partitionment and until a sufficient amount of knowledge were forthcoming to guide in the application of the principle, rest upon the basis of State lines as they at present exist. We have already intimated that it is quite

within reason to suppose that Government patronage would ultimately follow the successful operation by municipal agents of the unit plan. It is unlikely, however, that Government acceptance of the operation in those communities where education has proceeded farthest would be immediately forthcoming. Yet the probability of tardiness on the part of the Government need not be a bar. The mere acceptance of the task would furnish an opportunity for investment of wealth in securities bringing returns more rapidly and in larger percentage than any others at present in the world-markets. And with the increasing success of the undertaking, assuredly governmental recognition would come.

As has been suggested, existing institutions might fittingly be left until a sufficient amount of knowledge could be gathered. Existing boards of trustees, faculty organizations, and subordinate institutions might all carry on their work as at present until such a time as the findings of the foundation should disclose a sufficient knowledge of the changes to be made. Having allowed existing institutions temporarily to continue in their way, it would be the function for the foundation of the university unit to keep the knowledge which it was accumulating constantly before the inhabitants of the unit. If this were carefully and wisely done, the future of the given unit would be assured and the foundation

might ultimately be entrusted with the final selection for the given period of years of all administrative heads in the various educational organizations which in any way furnished a supply for any of the demands of the given area.

The charter under which such a foundation would operate would prescribe the future composition of this body. In the inception, it would only be necessary for a group to accept voluntarily the responsibility and seek incorporation for the purposes suggested, outlining those in its charter. In no other way could the act be accomplished, and the fulfillment of its mission would be the assurance of the foundation's perpetuity. And again, if its trust were carefully carried out, its power would be commensurate with its wisdom. For as the populace of any given university unit became more and more educated, the members would scrutinize with increasing care the endeavors of the foundation to fulfill its function and, with confidence in its wisdom, would add to its authority.

The most feasible way to an immediate beginning of such a project would be for one individual to exhibit an ultimate of leadership sufficient to call about him such a group, and to propose to them that they accept temporarily as their duty the gathering of the knowledge for the community in which they reside, and that furthermore they accept the responsibility

for the expense incurred by such a venture, and next that they proceed to appoint a man and instruct him to begin the analysis and tabulation. If the original voluntary group were of authority and standing in the community all existing data possessed by various municipal organizations would be open to the agent of the foundation at once. This group, as we have said, might either become incorporated immediately or exist for a time simply as a voluntary organization requiring frequent reports of the progress of the work, and as soon as these reports assured the success of the endeavor, incorporation for a specific purpose could be accomplished. A weekly and monthly evolution of the duties and functions of such an organization would soon establish the wisest course along which to proceed.

It would not be necessary in the beginning to include among the members of such a body any of the existing administrative officers in the various institutions feeding the community. In fact, it would seem inadvisable to make such an inclusion, for it has often been demonstrated that actual administrators are incapable, as a rule, of seeing beyond the influence which any given movement might have upon the institution of which they are a part, and few, indeed, are those who rise to the height of considering the population as a whole, confined as they are by the necessity of earning a livelihood, by

existing entanglements and promises, and by the invasion of authority even in the actual promulgation of their own thoughts. All these factors and many more prevent administrators from encompassing generally any vision for the group. Too often great projects are brought to an untimely end because of the narrow and restricted personal views of members who form the individual board. Too often also the active agents of projects hold within themselves the fatality of the proposal which they are asked to accept.

Furthermore, if the death of an institution is to be prevented, definite provision also must be made in the beginning concerning tenure of office. Meritorious ends are often defeated by a long contract and this should be guarded against.

As an additional safeguard, also, the members of the foundation should insist that frequent statements be furnished them by their agent; statements similar to the tonnage sheets in our large businesses illustrating the progress of the work. By this means the foundation could not only gauge the growth of the project which it was furthering, but also would evaluate the fitness of their chosen agent to perform his task.

An early duty of the foundation would be to establish a bureau for the analysis of the demands of the university unit. Then as the work progressed there

would evolve, associated with this bureau of analysis, a bureau of statistics in which the results of the analysis would be tabulated and kept up to date. And this would be followed ultimately by a bureau of supply which would undertake the distribution of equipment throughout the university unit. Through these three bureaus the municipal foundation for the study and advancement of community education might attempt without dominance to undertake modifications in the existing educational system, to provide equipment in some institutions, to further reconstruction and stop waste in others, and to propose from time to time new ways of supplying demands existing in the community. The foundation might ultimately have as one of its most powerful influences the business of subsidizing such institutions as required assistance in the demands which the community placed upon them and of furnishing the equipment requisite for supplying the students with the proper education for any vocation crying for supply at a given time. Within the space of a few years, perhaps within less than two, such a foundation should be able to provide sound and adequate knowledge upon which radical changes and amicable rearrangements might be based. It should be furnished means to secure full publicity, so that those to be served and taxed might have a knowledge of what was being accomplished, and in

the end, slowly, it is true, in some localities, more rapidly in others, provision could be made for a delineation of courses running throughout the entire system. The function of such a foundation would be solely an educational function for the community, fitting supply to demand, an analysis of demands being a prerequisite for the equipment for supply and a delineation of courses being a prerequisite for utilization of equipment.

It is perhaps unwise to attempt to enter into the details of the progress of such a foundation beyond this primary course, because its future would be determined largely by the character of the men forming the group and would perforce differ for differing communities even as the communities differ in their bents. But this much can be safely said, that the goal is clear — the furthering to the utmost of the happiness of the populace under study. And it is conceivable that in time, by a tactful presentation of its own educational function in the community, the foundation might exercise the most beneficial influence upon the progress of organization of the whole educational system of the unit from the lowest common school through to the highest post-graduate division. By keeping all informed continuously of its analysis of demands and by publishing its suggestions for supply, it should know just as perfectly those fitted for office in training the youth

for the demands as it should know the actual demands in every occupation to be filled within the limits of the unit. It would stand as an intermediary between the supreme court of education and the actual administrative body of the educational system. It would in time, in its future life, have among its members those who reached it by election, and the tenure of office of those members would, of course, be determined by its articles of incorporation.

The question of maintenance, ever an important one, must of necessity be dealt with in advancing such a proposition as that of the municipal foundation. There would, of course, be many sources of income open to such an organization. Probably, owing to the disorganized condition existing at the present time, the first requisite would be a gift. However, as a foundation proved its serviceability and value, allowance might be made from the funds collected by general taxation in the given unit. The foundation itself might even in time be fittingly the arbiter in the expenditure of funds in any given area. In fact, it is scarcely possible to conceive of any limitation that might be placed upon a wisely and judiciously administered foundation. Another specific source of income might be furnished by the evolution of such a vision as that held by the late Dr. Robert Kennedy Duncan, which resulted in the founding of the Mellon Institute for Industrial

Research in the city of Pittsburgh. Under proper organization the income which might honestly and fittingly be derived from the contributions of this type of institution to the industrial welfare of the community having a peculiar industrial bent, would be enormous. Yearly, by royalties from the industries, the foundation could have returned to it funds which would enable it to augment weak elements in the educational system necessary in order to return to the community those best fitted for service within its territory. In this way not only would the foundation feed the industries, but also the industries would, in turn, through royalties paid, feed the foundation, and in this way would be established a benign circle for the welfare of the entire university unit.

CHAPTER XI

DELINEATION OF COURSES

ONE result necessarily following an analysis of ultimates, and perhaps a result of equal importance in the promulgation of the system of education herein proposed, since it would be a most powerful force working for correlation, would be a division, as has already been hinted, of the fields of knowledge into departments extending throughout the whole plan, and a delineation of courses which might properly be grouped in such departments. Essential to a comprehension of the subject-matter presented in the following chapter dealing with departments and departmentalization, is a grasp of the process suggested as feasible to employ in securing the knowledge requisite for a general and thorough delineation.

It will be readily seen that in order to lead the pupil out of the educational system at any one of the chosen vocations, a careful delineation of studies to be pursued by him, from the time of his entrance to the primary school to the time of his leaving the educational system to undertake his work in the world, would be required.

One important function of the municipal foun-

dation for the study and advancement of community education would be to ascertain by a canvass of the various vocations, which we have termed ultimates, what subjects furnish the necessary foundation for any given occupation and what subjects relate themselves so closely to these necessities as to constitute beneficial electives. Such a classification, based upon information furnished by those practitioners actually engaged in the occupations themselves, would furnish the only groundwork for the educational system which would loose, at any given point, human products adequately equipped successfully to enter upon the work of the vocation which they had chosen to elect.

That we may better understand what is meant, let us choose an express example. Let us take a specific ultimate, surgery. At once, owing to the inadequacy of our present system of education, we encounter difficulties. The question to be answered in reference to this particular ultimate is, How is it possible to arrive at a delineation of courses that shall fit a surgeon to perform his vocational function? Yet, at the outset, we are plunged into the midst of confusion because the term "surgery" encompasses within itself a number of ultimates, each more or less definite, each requiring a marked specialization. We find that as time has gone on, this particular late vocation has split into parts, and that at the

present proficiency is gained only by concentrating upon some special portion of the field. Furthermore, present tendencies would seem to indicate that it is not unreasonable to suppose that ultimately there will be a demand for special surgeons for almost every region of the human body.

Everywhere we find evidences of the passing of the general surgeon and the coming of the specialized surgeon. An examination of the departments of surgery in our more advanced medical schools reveals that there have been created sub-departments governing each of these special fields. This development has probably not been so much an outgrowth of the wide variation required in the technic of surgery itself, as an outgrowth of advancement made in anatomy, physiology, and chemistry. The increased medical knowledge born of progress in these fields is making it increasingly difficult for any generalized type of vocationalist to operate successfully on all parts of the human body. We have, therefore, been forced to recognize in the abdominal region, for instance, four or five special operators, all of whom have the right before their fellow practitioners to enter the peritoneal cavity. In the pelvis, we must concede the rights of as many more, and in that vital part of the human body crowned by the calvarium, we bow to special surgeons for every organ. And at the moment we are seeing the beginnings of the

development of special operators dealing with the lungs and the mediastinum.

Such developments in the general field indicate the trend toward specialization. And yet, despite the number of specialized surgeons which we find actively practicing at the present day, we are quite safe in saying that no school of higher education has yet taken cognizance of the demands in this field. This fact is important to us for the reason that any attempts now made to delineate courses leading to specialized surgical functions must suffer, because of the inertia of our medical schools to progress in the process of demarkation, and because of the sovereignty of the belief that a certain period of years must dominate the prospective surgeon's higher vocational education as similar arbitrary time divisions have dominated his lower years of education. Little provision has been made in our medical schools to shape the course so that it shall lead to a definite ultimate.

Already, so complicated has the situation become that the reader might even now fittingly question the adequacy of our chosen ultimate to exemplify the process. But, as a matter of fact, the conditions would have been the same had we taken as an example engineering, or chemistry, or any one of the late vocations. We have chosen surgery to exemplify the proposal, not because the lines of demarkation

are more vaguely defined in this field than in any other, but because the vagueness here is typical of the vagueness found in all fields and because present conditions have indicated the tendency toward the recognition of the necessity for demarkation to an extreme degree in this particular branch. Vital impetus has also been given to this movement, in surgery, by the developments forced by the present world war. Efficiency in handling the increased numbers of those requiring surgical attention on the European battle fronts has demanded the creation of such a situation as is exemplified to-day in many of the hospitals in France. Here surgeons operate upon the same organ of the human body from morning until night on all cases referred to them from the central distributing office, and this means, of course, departmental organization on the basis of regional surgery. Quite aside from this development caused by the exigencies of unnatural conditions, there has been growing another department in more highly developed educational institutions in this country where a man becomes not primarily a regional surgeon, but rather a functional surgeon. Here again, the increase in knowledge in anatomy, physiology, and chemistry and other vital, related sciences, in regard to given groups of organs is responsible for this development.

While there is unquestionably truth in the state-

ment that specialization precedes the degeneration of the race, specialization must nevertheless be looked upon as a principle requisite to individual advancement in vocations. This, however, is but a part of the truth. Specialization, by promoting the individual's opportunities for accomplishment, is unquestionably a great single factor in promoting happiness. Nor does this fact invalidate the counter-truth that the broader the education the more likely the possibility of fulfillment of communal requirements and the attainment of happiness born of such fulfillment.

The educational system must ultimately recognize both of these operating principles. There must come a realization that in addition to providing a man with the necessaries of life, probably with a specialized vocation and instruction which fill the demands of such functions, there must also be a provision for the study of those contributory but not necessary subjects which will enable the individual to fulfill those demands of his communal existence which are not primarily conjoined with the demands of his specialized vocation.

Also another fact must gain recognition. Individuals vary. Vocationalists and culturists and all in the educational groups must acknowledge that it is quite possible that there are in existence certain individuals without receptors for types of education

which all groups attempt to force upon them. A general recognition of this one fact would eliminate, as our suggestions for departmentalization if put in practice would probably eliminate, a great stumbling-block in the progress of education generally. It is conceivable further that the recognition of the fact that as individuals differ in groups, they vary not only in the kind and number of receptors for various kinds of knowledge, but they widely differ also in their ability to digest or assimilate or correlate within their own physical structures impressions which come to them from the various outside sources.

But let us return again to our question, How shall we arrive at a delineation of courses for our specialized surgeon of the future? Our methods of analysis in this field it is quite conceivable might in the beginning be crude because we have not yet had sufficient practice in such a procedure. We have suggested that the one way out of the difficulty would be to establish a municipal foundation having for one of its functions the making of analyses. With the establishment of a foundation it would become possible to ask any given five hundred surgeons to make a survey of the course of their education from earliest childhood and to give to the foundation a delineation of what they conceive would constitute the proper course leading to such an ultimate. This

would mean, let us suppose, that the foundation would be presented with personal analyses from five hundred sources. Out of this mass might come, let us suppose, fifty per cent of courses upon which all would agree as necessary. This information then might form the foundation for the beginnings of a delineation of the proper course for surgeons of specialized type. Upon twenty per cent of the balance of courses perhaps ninety or eighty or seventy per cent would be in agreement. These courses thus agreed upon might be drafted in the delineation of courses for specialized surgeons, either into the compulsory field or into the elective field, and so on. The questionnaire would have to incorporate an indication that the answer should encompass not only the most specific functions in life, but also the communal, national, and international function of the surgeon. In this way a beginning might be made.

Changes most certainly would come in the course of time. These changes, however, would be based, always, upon the evolution of knowledge. Each community would begin to work out for itself the delineation of courses extending back to the earliest primary departments. Gross mistakes would be inevitable, if we attempted, now, without knowledge, to prescribe any form of delineation. We are quite sure, however, that the prescription of delineation, which is based upon a theoretical foundation

such as is made to-day by theoretical teachers who have never been practitioners of many of the functions for which they attempt to delineate, is unsound. On the other hand, it is not to be denied that among many of the vocations the practitioners themselves are not fitted to assist very materially in this delineation because they have been deprived of education in the habits of thought which would enable them to utilize an influence which would be of the utmost value in preparing them for their given vocation. Nevertheless, it would not be long, if this demand were created in the habit of thought, before all practitioners in every field of endeavor would be able to assist in making the necessary corrections in the first delineation.

In the first delineation a certain amount of arbitrary determination would be necessary, especially in the lower fields of education, because it might be unsafe to take the advice of the more unintelligent members of the human family in the matter of what would be wisest to elect in making one's self useful in any given community. At the top of the human family, our analysis by individuals might be a sound basis, but we should descend with less assurance to the middle group. Below this group surety of determination of advisable courses would grow less and less until an unsafe area would undoubtedly be reached in which it would be necessary to admit

more and more paternalism, and possibly we should arrive finally at a group where complete paternalism over prescribed courses would, in the beginning, be necessary. Probably, at the lower level the primary desire might be for an education that would dispense with work and allow only for pleasure. Here a paternal authority would certainly be necessary to demand that pleasure should only be a correlative of labor. An analysis of the most highly developed members would be a sound basis for a delineation of courses throughout the system for a given group, whereas an analysis of the lower grades of intelligence would form a very uncertain foundation for a delineation of courses for them. Therefore a delineation would vary from the point where no paternalism was necessary to the point where almost complete paternalism would be necessary to draft, for each member of the entering group, the compulsory and the elective studies. This paternalism, exercised upon those whose ultimates exist in the humbler vocations, would insist that those who are sent out for the more lowly tasks be taught the highest ultimates of citizenship and saving and, in addition, whatever beneficial and cultural subjects the limited time allowed them would permit, to lead them to the best conduction of themselves and their affairs while doing even the smallest tasks required by the most meager mental equipment.

It is easy to foresee a number of obstacles in the way of such a delineation. Among those to be reckoned with would be, of course, union domination of trade, the necessity for providing additions to the family budget, the multitudinous institutions providing similar equipment, the lack of a definite policy for any unit of population, the dearth of knowledge in regard to the relation of supply to demand, and the want of properly trained student guides.

With such obstacles hindering the progress of a sound educational system, the question immediately presents itself, What can be done to reduce the opposition? The incontrovertible answer is that education itself must be the agent in removing opposition. Each year, as a municipal foundation could, as a result of its analyses, furnish the populace of the given community with a sound equipment of knowledge, each year, as a result of more careful guidance of students, the families would be raised to higher points of efficiency, obstacles to the progress of the system would disappear. And since the system would in the long run, by fitting its products immediately to assume their given vocations at the time of their departure, increase the family budget, it would in like measure raise the standard of living and the consequent happiness of the householders forming the community. Were this the case it is

certainly within reason to suppose that the population, as a whole, would come to see clearly the value of such a system. The burden of the solution of the problem would rest in the hands of the foundation itself.

A pursuance of this thought for no matter how short a time will, we believe, be sufficient to indicate how tremendous would be the saving to all were a delineation of courses throughout the educational system accomplished. We believe that not only would a better practitioner be produced by complete course delineation, but also that if, with such complete delineation, there were, in addition, put into operation a plan for departmentalization, similar probably to that suggested in the following chapter, to facilitate the emergence of all individuals entering the educational system, the best practitioner might be produced in the shortest period of time. If those results were to follow course delineation and departmentalization, certainly no small contribution to the sum total of human happiness would be made.

CHAPTER XII

DEPARTMENTALIZATION

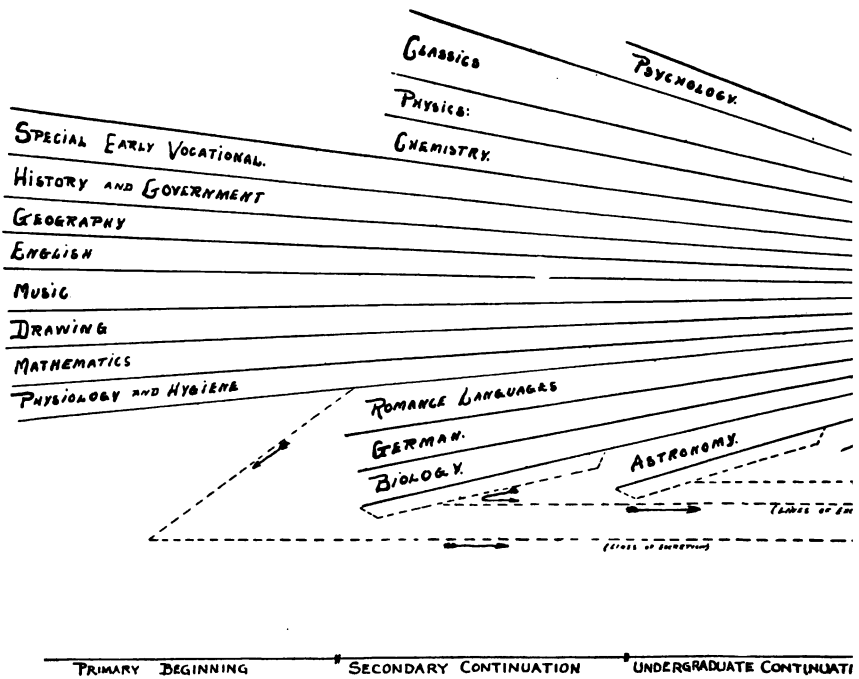
THERE is no good and justifiable reason for the existence of such arbitrary time boundaries as at present limit the activity and progress of individual members of our groups who present themselves to the educational system for training. We have long been dominated by the apparent necessity of moving groups of children over a given distance in a given period of time. Our modern educational system is built upon this idea, that such a group can only be moved over such a given distance in such a given time, regardless of the different ultimates of the group and equally regardless of the varying mental capacities of the individuals who compose it. Not only do the restrictions of the present arbitrary time boundaries wholly militate against the brighter elements of the entire group, but they reduce whole classes to the level of the average student and by so doing deprive the Nation of the increment which its system of education should bring to it by facilitating the emergence of the brighter students.

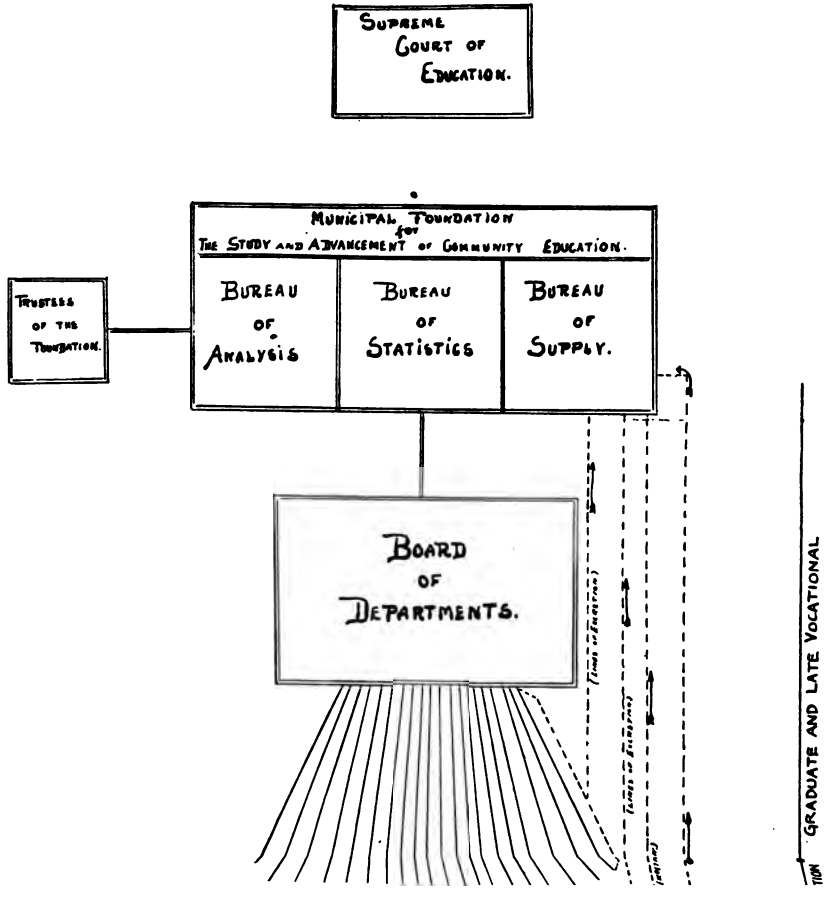
As we are to-day organized, our common-school equipment has apparently little or no elasticity because subjects are grouped under individuals.

Oftentimes these subjects are wholly unrelated and our primary teachers are commonly supposed to be equipped to handle any subject in the primary schools. In fact, many teachers handle all subjects that are presented to a group of children during a given year. Nor does this condition exist in rural schools alone. Perhaps the simplest method of getting away from this restricted form of organization is immediately to understand the other factor which would work for correlation in such a system as we have proposed, i.e., the principle of departmentalization which has been so great an influence in business life.

We have already intimated in a brief way what is herein meant by departmentalization. Defined in broadest terms, it is but the correlation of the whole system within a given university unit. Inasmuch as this proposal suggests changes which are radical departures from the conditions at present obtaining, it is necessary, for the time being, to put present conditions out of mind and to allow our thoughts to travel solely to the principles which have been operating in the most successful organization. The effect of the application of these principles here convinces us that they are the soundest to apply in the educational system in the gross university units.

The diagram which follows is an attempt to present, in a form more graphic than words, what is


Special Early Vocational.
History and Government
Geography
English
Music
Drawing
Mathematics
Physiology and Hygiene
Classics
Physics:
Chemistry.
Psychology.
Romance Languages
German.
Biology.
Astronomy.
Primary Beginning
Secondary Continuation
Undergraduate Continuati


SUPREME COURT OF EDUCATION.
MUNICIPAL FOUNDATION FOR THE STUDY AND ADVANCEMENT OF COMMUNITY EDUCATION.
TRUSTEES OF THE FOUNDATION.
BUREAU OF ANALYSIS
BUREAU OF STATISTICS
BUREAU OF SUPPLY.
BOARD OF DEPARTMENTS.
GRADUATE AND LATE VOCATIONAL

meant by departmentalization. It must be remembered, however, that this chart does not claim for itself completeness. Only a municipal foundation, the duties of which have been broadly sketched in preceding chapters, could fill in, with the necessary degree of accuracy, the details lacking in the present chart. But, after all, it is not the details that are of primary importance. The general plan of departmentalization will be, we believe, adequate to present the principles despite the dearth of details.

From this chart it will be seen that, under our proposed plan of departmentalization, certain departments would extend continuously from the lowest point of the system to the highest, from the beginning of education through to any point of emergence into any given vocation. While, as we have said, no attempt has been made to include all departments which might ultimately be necessary, it is sufficiently clear that the fundamental departments, since we are dealing primarily with America, would be English and citizenship.

What might be included under the general caption of English is fairly well defined. Citizenship, however, is a more elastic term and would encompass several departments, such as history, government, geography, physiology, hygiene, and mathematics. These departments would run throughout from the primary division through the post-graduate school.

Other departments would begin only in the secondary division — chemistry, physics, Romance languages, German, and biology, for example. Others would begin in the undergraduate school and still others in the graduate school. In the graduate school would begin the study of various fields of work which meet special late vocational demands requiring both intensive and extensive preparation, such specialization as is required for our late vocations or present-day professions. The delineation of these courses could be outlined again only after the fundamental analysis of the demands of a community had been made.

The most immediate results of such departmentalization would, of course, manifest themselves as effects upon students entering the system. Let us now enter a group of children into an educational system which has been departmentalized. In such a group would be children of all mental equipment, home influences, and variation of ultimates. The first essential for the mass would be the provision of an education for them in the irreducible minimum which must form a foundation for all their future education, i.e., there must be for all, regardless of vocation, regardless of ultimates, an irreducible minimum, in certain fields, which must be taken the same for all. In this irreducible minimum the study of the language which the individual must use, —

that is, in America, English, — and such other subjects as will train him to perform his duties as a citizen, must find a place. The irreducible minimum would be represented in our departmentalized system by those departments which extend from the lowest point to the highest.

The next necessity would be to allow children to travel as rapidly through the system as their receptivity would permit. Emphasis would be placed solely upon the probable force that would drive any individual in a given group any distance in any time, and the rapidity of the progress and the distance traveled would be dependent solely upon the ability and the capacity of the traveler. Arbitrary time divisions would be entirely eradicated and progression would of necessity be closely related to the study of the individual children, through a department established for that purpose, in order that the capacity of students might be gauged and not flooded to the point of injury.

The school physicians, the visiting nurses of the school, who ascertain home conditions and the attitude of parents toward education in general, the teacher who has charge of a given part of a department, would all furnish information important to the welfare of the student. The statistics gathered by these agents would be carefully tabulated in one department and the child advised and guided in

the light of the knowledge thus gained. The progression of the student might be easily accomplished when left in the hands of the department whose sole duty it was to undertake student guidance and arrange classes for students on the basis of the knowledge it possessed.

It is conceivable that a percentage of our entering group under adequate guidance would complete the work of the primary grades in much less time than it would take a similar group at present. On the other hand, a small percentage might require a longer period of time than is required at present. The advantage, however, would be that the drones and the backward students would not reduce whole classes of varying capacity to the dead level of the average. Another percentage would, of course, early exhibit the fact that they were in no way fitted for the educational system provided to take care of normal children and they, perforce, would be excreted at the earliest moment in order that other methods applicable in the training of subnormal children might be employed. Thus, even in the primary school, a process of excretion would go on through the department of student guidance.

As the first members of our group reached the end of the provision made in the primary division of any given subject, the necessity for continuing into the secondary school special studies in which profi-

ciency had been shown would present the first serious difficulty. Under our present system the student must have compassed the work of all departments in which he has entered in the primary school before passing on across the first arbitrary time division into a secondary school. This, of course, is one of the most serious obstacles in the way of the application of the principles which we have attempted to outline, existent in the present form of organization.

It will readily be perceived that unless the delineation of courses arrived at by the analysis of ultimates be continued by departmentalization from the lowest to the highest point in the system, the principle itself could not be successfully put in operation. All efforts at the present time are being expended to discover the expedient which will obviate the necessity for accepting the fullest application of this principle. Perhaps it is the practice of wisdom to face directly the question and ask why the principle of delineation of courses and departments should not extend throughout the whole system and why the very elastic principle of departmentalization should not be extended through to the smallest primary units.

What is proposed here is, that a student be allowed to push forward as rapidly as possible in those departments in which he has shown peculiar capa-

bility. Those who first reached the end of the course, in any department which the primary educational equipment could give, would travel from those classes in which they had finished to the secondary equipment for that unit. It might conceivably happen, without any difficulty, that for certain classes some members of our given group might be carrying on work in the primary school simultaneously with advanced work in other classes in the secondary school, always, of course, under proper guidance. And so on the principle would operate throughout the system. Furthermore, it is conceivable that our group which was entered might be at the end of ten years disseminated throughout the whole educational system to different points of departure, varying always with the capacity of the student and the requirements of the ultimates which the individual had elected to reach. The result of this would be that a constant supply of individuals properly equipped would be furnished, to take care of the different demands existing in the community. The only period at which group assembling would occur then would be at the period of entrance and until one student showed an accumulation of knowledge sufficient to take the first step in progress. It is also conceivable that a department of student guidance would, through its agents, sit in class after class and determine, by a survey, the bents of the individ-

ual students in the room. This provision for the super-normal would seem, to us, far more important than provision for the average student and the infra-normal.

It would be possible under such a system for any group which presented itself for treatment to be handled individually. Each member would be presented with opportunities for assimilation and growth. A thorough grounding in the fundamentals required by his particular department ultimate would be furnished as rapidly as his capacity for observation would admit, and in addition he would be allowed to select with almost unrestricted freedom from any of the contributory fields of learning which his natural capacities sought. He would furthermore be allowed the privilege, which is after all his right, of setting with his own brain the pace which he was fitted to hold in the race. The domination of the mediocre and the average over the able and the eager would be forever at an end. And equally important, the individual, produced from a system such as this, would present, at the time of his departure, those individual characteristics which nature has ordained shall be the most valuable possession of man, our present educational system to the contrary notwithstanding.

It will be seen from this that we believe that the proposed solution of present educational entangle-

ments can be summed up in the one word "departmentalization." But the end is not here.

The idea carries with it the application of election in government to the whole system. The present quarrels existing in the educational world between colleges and secondary schools, between secondary schools and primary schools, have their origin in the same condition. Complaints of the domination of upper groups are met by complaints of a lack of sympathy on the part of lower groups, and so on it goes throughout the entire organization. This would be completely wiped away if the plan suggested were put in operation. We should no longer be distressed with the problem of conciliating those in authority in the primary schools who object to the domination of standards set by those in the secondary schools, and in like manner, those in the secondary schools who complain of the domination of standards set by universities, colleges, and institutions of higher learning. If this one result were secured, much available energy which at the present time is being wasted in useless controversy might be turned into channels where it could be expended for the production of good. This would be but the recognition of the principle — a recognition which must, in the course of time, become inevitable — that the educational system should be shaped not by the demands of any one institution based upon its equipment,

but rather by the demands of the population which the various institutions are to serve. Here, once again, it is apparent that demands can only be ascertained by an analysis of the ultimates.

Here again also we must face the fact that if democracy is sound, its principles should be applied to our educational system, and it now becomes necessary to determine the governmental equipment best suited to the furthering of such a system as is herein proposed. And it would seem that the most representative and democratic governing body would be one which would contain among its members representatives elected from each section of each department. This body might be called, as we have indicated on the chart, a central board of departments. Knowledge has been growing rapidly with the progress of organization, and those intimately connected with the administration of affairs even in the smallest department of organization must be brought into direct relationship with those in other departments in order that the work may be properly correlated and that the best results for the entire organization may be secured. In the proposed plan, as we have said, each section of each department would elect its representatives to the central board. Those operating in the departmental fields would be entitled by virtue of their position to be represented in the various administrative groups with which

they are concerned. The departments of the primary section would elect, the departments of the secondary section would elect, of the undergraduate and graduate sections also, and in this way the various bodies all would be correlated. In this way, too, would the difficulties which now set primary groups warring against secondary groups and secondary groups against college groups be, by representation, obliterated and out of it all would come the union of purposes, the resultant purpose being to further the interests, in every possible way and as expeditiously as capacity would admit, of every individual from the time of his entrance into the system to the time of his departure regardless of how low or how high that point of departure be.

This central board of departments would, furthermore, also have local autonomy. The policy and budget under which the administrative group would operate would be determined in turn by the municipal foundation upon which the board of departments itself would, in time, have official representation. The board of departments in conjunction with the municipal foundation would then have the power of appointing to the supreme court of education suggested in an early chapter. The policy of the whole system would be determined by the analysis which would take place in the foundation. The local policies would also bear the influence

which the analysis by the foundation would furnish, but in each administrative unit the fullest autonomy could be allowed for the fitting of the equipment to the bent of the unit which it was to serve.

This type of organization, so elastic and yet so purposeful, would, we believe, help to secure for the university unit the most efficient economy and the most beneficial results. Details of an organization such as this could be presented only as resultants of the analysis which would be provided in the first instance by the voluntary municipal foundation. Here again lack of details is not important. The important immediate necessity would seem to be that the beginning be made under proper leadership. By moving backward and forward between the highest educational provision and the lowest building unit, to find our way by analysis downward or by synthesis upward, and by so doing to cope with the difficulties, one after another as they are encountered, it is quite within reason to suppose that it might be possible to work out the proper solution for the entire problem. Day by day thereafter, difficulties would appear and disappear, and with the disappearance of each, progress would be made not only toward a delineation of the details of organization, but also toward the ultimate welfare of the community. All great evolutionary processes have

come in a similar way and have, when held true to their purpose and vision, gradually, step by step, arrived at the ultimate toward which they were aiming.

CHAPTER XIII

CONCLUSION

There is magic in the distance where the sea line meets the sky,
It shall call, to singing seamen till the fount o' song is dry.
ALFRED NOYES

THE adequacy of a system of training must be gauged by the progress of the society which fosters it as well as by the fitness or unfitness of its products. It would be flying in the face of truth to contend that the American Nation has not progressed and that this progress has not been due to the diffusion of education and the dissemination of knowledge. It would be equally futile to argue concerning what advancements might have been made had we possessed, up to the present, a different system. It is not purposed here to indulge in this species of *a-priori* reasoning.

One fact is, however, clear and that is, that despite the national progress made through education, the tendency on the part of educators has ever been to make old bottles accommodate new wine quite regardless of either the size of the containers or of the quantity of the vintage. Little can be gained, however, by attempting to measure the distance our educational system has lagged behind those leading and progressive institutions which have lifted this

Nation to its present stage of development. Nor are the causes of this sluggishness important save as they indicate obstacles still to be surmounted; problems still to be solved.

In an early chapter of this study we suggested five leading questions, the satisfactory answering of which would, we believe, indicate the way out of our present gross educational difficulties. And our aim in the subsequent pages, despite our wanderings, has been ever toward the answering of these.

To epitomize, we believe that the chief cause for the inadequacy of our present system of education in America is the neglect on the part of all educational institutions to apply to themselves and to the system as a whole the laws of supply and demand. Coupled with this is their failure to give any large amount of consideration to regional variances and community bents, and their willingness, save when pressure has been exerted by external force, to allow the industries and business corporations to exploit their products during the early years following graduation.

Growth and innovations have both contributed to the difficulties encountered by the system in whatever endeavors it has made to lead rather than follow in the onward pushing movements. The old containers have become quite too small: the new vintage quite too large. And so rapidly have the

problems multiplied that our educators generally have not been able to keep pace. Universities, especially, have been singularly unable to prescribe for themselves any satisfactory formulæ for raising the average graduate to a position of maximum individuality and usefulness. We have persisted in using the forms with which we started. We have not generally admitted that those forms will no longer provide for the development which we have gained by their use.

It would be foolish to maintain that uninteresting and unfitted as is our average college graduate, he would have been better had he not passed through the educational mill. He is what he is both because of and in spite of the system. It is only in the exceptional case that a college education is a doubtful asset or a liability, and even in these cases the responsibility may rest jointly upon both the individual and the system.

Our progress in education has truly been a curious one. We have gone from the hard and arbitrary curriculum, with its primary insistence upon training the memory and the consequent devitalization of valuable and beneficial subjects, to the free elective system, with its wholesale invitations to follow the paths of least resistance, back to a half-hearted compromise somewhere between the two extremes, and we have arrived at what? Certainly at little more

than an educational jumble. A maelstrom in which the maximum amount of theory and the minimum amount of practice whirl those who are thrown into it round and round for definitely fixed periods of time, to be cast out as flotsam for another period until corporate business and industrial organizations can accomplish that which could and should have been done by general education. We have been devoting our energies to the elevation of the degenerate and the child of arrested development. We have, through our play schools, attempted to fit our children to enjoy life by feeding them upon the pap manufactured by theoretical educators possessing little knowledge of the vital sciences of life. And while this process has been going on and funds have been diverted and directed into these less profitable channels, those of the same generation, more fortunate in their mental equipment and eager to learn and to progress, have been chained to the dull and to the average and have been allowed to proceed only so fast as they were able to drag this burden with them. Search where we will, with the single exception possibly of Gary, there can be found few organized endeavors to facilitate the progress and early emergence of the brilliant students. So-called "trailer" sections which have been formed in some classes in our various universities into which are shunted the poorly equipped and less zealous stu-

dents in order that the progress of the more intelligent may not be hampered, while representing attempts to grapple with the problem have ever been looked upon with distrust. "Consider what the effect of placing a student in a trailer section in any course would be upon that student," say the educators. "What incentive can there be for a boy or girl so placed?" And here again the domination of the average and of the weakling over the robust and the exceptional is all too evident. "We are wasting time in our educational system" is an indictment which has rung forth in every educational meeting during the past decade. "We are losing from between two to three years," declare state superintendents and college and university presidents. Yet what are we doing to remedy the situation?

Probably the most popular remedy at the present time in the higher institutions of learning is the so-called "junior college," just as a few years ago the popular remedy was the so-called "junior high school." These both are partial attempts at departmentalization and delineation in a small section of the system. At best both are but temporary makeshifts which can produce no lasting beneficial results. They may placate and palliate for the moment, but they will not substantially alleviate.

Nothing short of complete delineation and com-

prehensive departmentalization will solve the problem. And the soundest method of solution, we believe, is through a municipal foundation for the study and advancement of community education.

We are convinced that the first steps toward the correction of our system would be for a group of influential men in a given community to organize for the purpose of forming such a foundation, to endow it with adequate funds with which to carry on its work, to choose a leader quite regardless of political affiliation, and to give him the utmost freedom to carry on his investigation, stipulating only that the members of the foundation be furnished from time to time with adequate reports of the progress made. Then that the foundation as an early duty determine upon the boundaries of the given university unit and begin the collection of statistics covering all those resident within its confines and at the same time, for purposes of analysis, that it partition this given unit into a number of smaller units and that it ultimately correlate the results of its findings in these smaller units for the larger university units. In this way it could arrive at the demands of the unit and then it could attempt a realignment of the educational system for that unit, in order that an adequate supply might be furnished to meet the demands of the community.

Simultaneously with this analysis should come an

analysis of the requisites for any given educational ultimate obtained through a careful canvass of, let us say, five hundred practitioners in each vocation. These requisites, when ascertained, should be drafted into the educational system in such a way as to delineate courses for all given vocations for which a demand exists. In addition to these requisites, other beneficial subjects should be grouped as electives in such a way as to be advantageously pursued in conjunction with the required courses.

That further than this the foundation should attempt, through its bureau of analysis and its bureau of statistics, to furnish information whereby all institutions engaged in education within the given unit might correlate their courses and unite in their endeavors to eliminate loss, to further the institutions and facilitate the emergence of all children applying for education. In addition, as the foundation increasingly proved its worth, this realignment should take the form suggested, namely, that departments should be made continuous throughout the whole plan from the lowest point in the primary school to the highest point in the graduate school. That above these departments there should be organized a central board of departments consisting of representatives from each segment of each department; that this central board should look for the information to direct the educational policy of

the university unit to the municipal foundation. That above the municipal foundation and quite independent of it should be organized a supreme court of education for the purpose of dealing with any difficulties that might arise in the board of departments and in the departments themselves. Each segment — which would correspond to our present primary, secondary, undergraduate, and post-graduate schools — should be granted reasonable autonomy through the central board, and this autonomic, democratic, and representative government should extend to the foundation and to the supreme court. In short, that in the matter of control the broadest tested principles of democracy should be applied.

It would be scarcely possible to place any limitation upon the activities of a municipal foundation since that organization would have for its purpose and sole aim the furthering of the interests of the entire community and the substantial increasing of the sum total of human happiness within the given university unit. The bureau of supply, which would form the third department of such a foundation, would, in the end, demonstrate the right of the foundation to power. If properly administered, it would prove most valuable and would furnish, by its statistics, properly trained individuals for any position within the given area. The bureau would

be able to furnish any organization requiring knowledge, complete statistics, at any time, covering the unit. Such a census, kept up to the minute, would, in itself, be a tremendous factor in furthering the interests of the community and of the Nation.

The machinery required to operate such a system would be neither complex nor expensive. Even were this not the case, the results possible to be obtained from such a bureau as the bureau of statistics would alone be of such a character as to return to the community interest many fold on either the initial investment or the funds required for maintenance. In fact, it is quite conceivable that the saving in waste alone — that which now exists in any given community or university unit — would be sufficient to maintain the machinery of the foundation for a considerable period of time. The possibilities of the whole unit plan and the foundation plan, solely as economic measures, seem boundless. The effects upon the institutions which would foster such foundations can likewise scarcely be estimated. We believe that ultimately the institutions would come to hold the most important positions in the community and that the populace of the entire university unit would turn to the foundation not only as a source of information and guidance, but also as the active agent, increasing their own individual welfares.

The educational equipment of our university unit

would no longer be a thing detached, a thing dealing with but a small part of the population. It would hold within itself the future of the populace both collectively and individually. It would supply normal demands, it would adjust difficulties arising through sudden congestions in certain supply. In short, it would apply the principles of internationalism itself in a given area, and if in time the entire country came to be composed of such units as have been suggested, by the fullest coöperation between these units, supply could be transferred quickly and readily wherever sudden and abnormal demands existed. In times of peace its results would be these. In times of war the statistics which the bureaus of the various municipal foundations could furnish the Federal Government would be invaluable and would render the Nation the most efficiently organized in the world. As a preparedness measure alone, the plan commends itself to consideration, and yet, unlike most preparedness measures, this would carry no hampering of individuals' activities.

To direct the members of the Nation into such fields of activity as actually exist in the demands, while possibly forcing more to elect ultimates which, in our present hit-or-miss plan, would not be elected, is not placing an injurious restriction upon the freedom of the individual. Far better would it be for such a one to know that no demand existed for his

particular ultimate chosen, at the beginning of his educational career, than to discover that fact only after he had spent from fourteen to twenty-five years in preparing himself to fill a mythical place.

The migratory element in our populace would not in the least interfere with the application of the principle. The doors of each university unit would be open, but each university unit would stand, far more than institutions stand at the present time, for emphasis upon the certain particular fields of learning determined by the regional variances and the bents of the communities. Warring factions in education would be changed to coöperative forces and the aim of all would be seen to be the same, standing clear above individual difficulties and aspirations. Education, were such a plan put into operation, would become in truth an end in itself, rather than merely the means to an end.

The University extension movement, which has gained vogue in the past few years, an attempt to bring universities, through a few of their professional members, to the doors of those far removed from seats of learning, can never effectively solve the problem. Educational extension, not merely university extension is what is demanded — a practical system that will further the interests of all and in increasing proportions as the individuals remain within it. Theoretical lecturers, sent out by depart-

ments of university extension to those dissatisfied members of society who elect such courses, can never substantially increase the sum total of human happiness or greatly add even to the capacities of individuals. University extension courses, like courses within the universities themselves, are, despite the youth of the extension movement, already caked with the crust of custom and tradition. Educational extension, not university extension, is the solution; and educational extension can be accomplished only by striking out boldly into uncharted seas.

We must not content ourselves with any system which falls short of rendering the maximum amount of service to all who compose the Nation. Education for all must be the foundation upon which the sills of democracy rest. We must transcend petty difficulties and schemes propounded by theoretical exponents, schemes which redound only to their own credit and which further only their own interests.

That system of education will alone be satisfactory which shall display the operations of the soundest principles of economy, and which shall command for each part of the educational equipment the utmost respect of all. That system alone will function to the fullest which shall take cognizance of the needs of every member of society and which shall place at the disposal of the populace all the informa-

tion which can be utilized in furthering the interests of each and every individual member.

We believe that the course which America in company with other nations must pursue lies somewhere in the direction which we have endeavored to indicate. We believe that immeasurable service and that freedom which is the inalienable right of man surely lies at the end of such a journey. The voyage may be long, it is true, the tides high, and the storms heavy, but the port is "well worth the cruise." Courage alone is required — the courage that defies convention and tradition, the courage that is born of faith that must ever firm the navigator who pushes out into strange new waters and makes

THE BEGINNING.

SUPPLEMENT

These are some hints towards what is in all education a chief necessity, the right government, or, shall I not say, the right obedience to the powers of the human soul. Itself is the dictator; the mind itself the awful oracle. All our powers, all our happiness, consist in our reception of its hints, which ever become clearer and grander as they are obeyed.

RALPH WALDO EMERSON

CHAPTER XIV

THE PITTSBURGH COMMUNITY

As suggested earlier in this volume, the purpose of its authors is not primarily to suggest means by which the American Nation may be divided into university units nor arbitrarily to set the boundaries of any such divisions. It is rather to state the economic principles which, we believe, could be applied to all communities with equal beneficial results, and, without professing accuracy to any marked degree, — since it should be clear to all by now that accuracy, without accurate statistics, is impossible, and accurate statistics, we have shown, are not available, — to sketch, roughly and in broad outline, a plan for the reconstruction and realignment of the whole educational system and to make, so far as is possible, an application to the particular community in which this study had its inception.

Pittsburgh, because of the development of its industries and its disorderly growth during the past quarter of a century, perhaps furnishes us with as good an example as we could desire.

It has been said that Pittsburgh is composed of a number of small towns, and in a measure this is true — perhaps more true of Pittsburgh than of some

other cities which have grown with less rapidity. The Pittsburgh metropolitan district has been roughly defined as that area extending from the center of the city for a radius of approximately ten miles. Within this comparatively small radius, we find sixty-three more or less distinct communities; Aspinwall, Avalon, Bellevue, Ben Avon, Braddock, Bridgeville, Carnegie, Carrick, Cheswick, Clairton, Coraopolis, Crafton, Dormont, Dravosburg, Duquesne, East McKeesport, East Pittsburgh, Edgewood, Edgeworth, Elizabeth, Emsworth, Etna, Finleyville, Glassport, Glenfield, Greentree, Haysville, Heidelberg, Homestead, Ingram, Knoxville, Leetsdale, McKees Rocks, Millvale, Mount Oliver, Munhall, North Braddock, Oakdale, Oakmont, Osborne, Pitcairn, Port Vue, Rankin, St. Clair, Sewickley, Sharpsburg, Spring Garden, Springdale, Swissvale, Tarentum, Thornburg, Turtle Creek, Verona, Versailles, Wall, Warrendale, West Elizabeth, West Homestead, Westview, Wexford, Whitaker, Wilkinsburg, and Wilmerding, not to mention Allegheny now incorporate as a part of Greater Pittsburgh, and generally known as the "North Side."

Bordering this twenty-mile circle we find a score of other communities differing little in bents and exhibiting few regional variances from those included within the circle; Woodlawn, Ambridge, Aliquippa, Monessen, Donora, Beaver Falls, Roch-

ester, New Brighton, New Kensington, and many others, all because of the similarity of their bents and their demands may be roughly termed the "Pittsburgh Community."

Were the unit plan put into operation, our university unit which would center in the Pittsburgh community would extend over a much larger area. It is conceivable that, owing to the nature and character of the district, the Pittsburgh university unit would include that portion of the country lying between latitudes 41° 25′ and 39° 25′ north and between longitudes 75° 25′ and 83° east; that is, roughly, extending from approximately the northern boundary of Clearfield County, Pennsylvania, to the southern boundary of Preston County, West Virginia, and from the northern boundary of Crawford County, Ohio, to the southern boundary of Ross; from the Alleghany Mountains on the east nearly to Columbus on the west and as far south as Parkersburg, West Virginia. The parts of this district present such strikingly similar characteristics that, in the gross, we may say that the bent of the whole area is the same.

Hereafter, then, when the Pittsburgh community is mentioned, it must be remembered that not merely metropolitan Pittsburgh is designated, but rather all that territory lying within the suggested boundaries of the proposed Pittsburgh university

unit. By metropolitan Pittsburgh is meant that district previously designated as lying within a ten-mile radius of the city itself. Whenever the city of Pittsburgh alone is named, the term applies only to the area bounded by the present city limits. These distinctions should be constantly kept in mind, since, in the remaining chapters of this volume, all three of these divisions are dealt with.

As we have said, all parts of the Pittsburgh community, including as it does portions of Pennsylvania, Ohio, Maryland, and West Virginia, possess to a large degree the same outstanding physical characteristic. The natural resources underlying most of its region being the same, the character of the industries, largely dependent upon these natural resources is, in the gross, uniform. The whole community, therefore, by virtue of its regional bent, presents certain large special demands to the educational system for supply.

Accurate statistics covering the population of the Pittsburgh community are unfortunately not available. Those furnished by the last Government census are seven years old and are, therefore, of little value. It is probable that the population of this area numbers at present between five and seven million souls. In locating our boundaries, as suggested, this fact has received consideration. We believe that this body populace would not be too large a one to form

our first university unit and that the compilation of statistics covering seven millions of people would not tax beyond its capacity or point of maximum efficiency the administrative equipment of a municipal foundation.

Broadly speaking, the chief industries in this area are the steel and iron trades. Associated with these industries, because of similarity of materials, are the tin plate, the fire brick, the air brake, the window glass, plate glass, electric machinery, table ware, aluminum, white lead, and radium industries. Next in importance possibly to the steel and iron are the associated industries of coal, coke, oil, and gas and numerous special industries in smaller numbers which have sprung up because of these resources of the region. The latest statistics available, those of 1909, furnished by the local Chamber of Commerce, list these various small industries at 211. In addition to these there were in that year 391 bakeries, 248 tobacco manufacturers, 19 slaughtering and meat-packing houses, 324 printing and publishing establishments, 24 paint and varnish concerns, 20 manufacturers of confectionery, 42 steam laundries, 7 awning, tent, and sail manufacturing plants, 5 rattan and willowware manufactories, 15 brass and bronze, 41 brick and tile, 40 carriage and wagon, 3 engraving, 7 flavoring extracts, 15 flour-mill and grist-mill products, 16 food preparations, 6 fur

goods, 11 furniture and refrigerator, 3 galvanizing, 31 ice, 6 jewelry, 12 leather goods, 6 leather, tanning, currying, and finishing, 8 distilled liquors, 28 malt liquors, 86 lumber and timber products, 36 marble and stone, 3 millinery and lace, 53 mineral and soda waters, 13 models and patterns, 39 druggists' preparations, 6 photo-engraving, 8 fire-clay products, 8 shipbuilding and boatbuilding, 11 soap, 11 statuary and art goods, 9 surgical appliances and artificial limbs, 5 wall plaster manufactories, and in addition numerous pickling and preserving plants, one of which, the largest of its kind in the world, furnishes employment for approximately four thousand people. These few obsolete statistics culled from the mass indicate the gross industrial characteristics of metropolitan Pittsburgh.

To supply the demands of these industries and the unmentioned others, Pittsburgh proper has, according to the latest statistics available, 56 primary parochial schools, 125 primary public schools, 1 parochial secondary school, 2 industrial schools, 12 private schools, 11 commercial schools, 3 theological seminaries, 1 college, 1 technical school, and 2 universities, a total of 219 more or less distinct pieces of machinery forming the educational equipment of the district.

The absolute accuracy of these figures cannot be vouched for. Repeated attempts at authentication

failed to reveal any one place in the city of Pittsburgh or any one organization possessing full data concerning the number of schools and the character of the same. The local board of education did, of course, promptly furnish figures covering the schools immediately under its jurisdiction, and stated further than this that, since it had no jurisdiction over other schools, it had no knowledge of the kind or number of those in existence. No better example of the lack of coördination and coöperation could be desired. Nor is this any more true in the case of Pittsburgh than in the case of other cities. Boards of education know nothing about that educational equipment over which they exercise no authority, and appear to care even less. As a result duplication and consequent waste through ignorance inevitably follow.

Impossible as it was to secure accurate statistics concerning the educational equipment of the city of Pittsburgh alone, even more impossible was it to gather statistics covering the educational equipment now existing within the roughly defined boundaries of our proposed university unit, the Pittsburgh community.

Such wholesale lack of accurate knowledge can only indicate that the educational business is conducted without any general stock-taking and without any reckoning of either assets or liabilities. It is

scarcely possible to imagine a business organization operating in this way. If an enterprise undertook to do so, however, it would in all probability operate with no more success and with no greater economy than does our present educational business. In short, the educational system in our municipalities, of which that operating in Pittsburgh is a fair example, is a disorganized, uncorrelated jumble, all variety and no unity, and as unlovely when contemplated in this light as it is inefficient.

However, let us return once more to the gross physical characteristics of our Pittsburgh community, in order that we may ask, quite apart from any question of organization, how has the educational system reckoned with these? The answer is not difficult to find. The curricula of the Pittsburgh public schools show few variances, in fact, none of importance from those operating in the public schools of other communities not possessing an industrial bent. Nor does further search reveal any organized endeavor to shape by special emphasis the output of the schools definitely to qualify for specialized early vocational service. The truth is forced that while the bent of the Pittsburgh community has been rapidly developing, the educational system has virtually remained stationary.

But, argue the protagonists of the present system, the bents of communities are constantly changing.

Consider St. Louis, Chicago, and more to the immediate point, Detroit. Surely no educational system can properly function if it be continually changing to keep pace with the flux and flow of industries. If we admitted the soundness of this reasoning, which as the preceding chapters in this volume attest we by no means do, there would still remain this much to be said in way of direct rebuttal. Granted that communities do change in bent. The exhaustion of natural resources compels this in some cases. In others, the growth of new industries effects the miracle. This does not vitiate our indictment of the educational system. The system has been impervious to influences other than change. In fact, it has constantly failed to reckon with either growth, evolution, or existence of regional bent.

In recent years the automobile industries have changed materially the character of many of our Middle Western municipalities, particularly those cities on or near the Great Lakes. However, so far as can be ascertained, no marked changes have come in the system of education as a result of this industrial growth. Gary, of course, is an exception which must be noted. But it is questionable if the causes for the changes inaugurated in the school system of Gary can be traced solely and directly to the demands created with the establishment of the plants of the Bethlehem Steel Corporation which built the

municipality. Certainly there are certain grains of truth in the statements of those who contend that our primary and secondary systems of education have not substantially furthered the progress of our communities by training for specialized early vocation. The vocational road which must be traveled by approximately ninety per cent of our populace in any municipality of size is strewn with innumerable wrecks, the natural products of carelessness and inefficiency in a system which takes little thought of what is its only tenable aim, namely, to produce an adequately equipped supply for a definitely known demand.

Consequently we cannot believe that to reckon with community bents by analyzing the individual ultimates represented in the communal demands, to delineate courses which shall fit for these ultimates, to departmentalize the educational system that the demands of the community may be fully supplied, to facilitate expansion to meet new demands whenever such appear, and retraction whenever the market for certain supplies disappears, would be placing flexibility above sound economic efficiency. Loss of years, energy, health, and lives we shall some day come to realize can be prevented only by reckoning with industrial flux and flow.

Pittsburgh may be no worse off in respect to its

system of education than any other municipality of equal size. Unbiased scrutiny, however, leads us to believe that in some respects, at least, especially in correlation and coöperation in its educational work, the Pittsburgh metropolitan district, and likewise the Pittsburgh community, has fallen behind other progressive sections of the country. The results obtained by such a survey as that of education in the State of Vermont, conducted by the Carnegie Foundation, and by the survey of public schools in the city of Butte, Montana, lend weight to this belief.

To remedy the evil in our formal system of education, unions have been formed among workmen themselves, to furnish the protection which the educational system has failed to give. These unions fix the years and the hours of labor and the character of the work which shall educate the individual from his entrance as a novice to the time when he shall become a skilled journeyman in his trade. In other words, and especially is this true in the Pittsburgh community, to supply the many demands of the industries, there has come into being, because of the failure of the formal educational system, an accessory educational system which takes the products of the compulsory governmental institutions and forces upon them an additional period of instruction and guidance that they may be fitted properly

to perform their tasks. This education is carried on under the jurisdiction of practitioners within the industries themselves. From this accessory, industrial, educational system some are drafted back into the academic system, and at various points in the latter, individuals are drafted out again into the industries, but here again little coöperation is in evidence. The coöperative plan operating at present in the University of Pittsburgh is, to be sure, an attempt to correlate the two systems, and since it is working in the right direction, it may be productive of some good. But it falls far short of striking to the roots of the difficulties, and it can never wholly obtain all the results desired. The industrial system takes little thought, as a rule, of the preparation which the academic institutions give, and many of the academic institutions regard with ill favor, if they consider at all, the system which attempts to do the work which it should have done.

No matter how far an individual has proceeded in the training furnished by the primary and secondary schools, he enters the industrial world usually at one point and must fulfill the unionized requirements before he can become a journeyman and a recognized practitioner. In every community and particularly in such an industrial community as Pittsburgh, this forms one of the most serious problems which the formal educational system has to face. If the aca-

demic system could send to the industries men who could compete in an economic way successfully with those members of the unions possessing little formal educational training, the effects upon the unions themselves, to say nothing of the effects upon individuals excreted, would be worth all the effort and the possible additional expenditure incurred by the inauguration of such a system.

What is needed, of course, in the Pittsburgh community is an application to the educational system of the fundamental principles of economics. As we attempt to grope our way through all the maze of difficulties and as we contemplate the waste of time, of effort, and of men, and the various systems of training such as are exemplified by those operative in the United States Steel Corporation and the Westinghouse plants, we come more and more surely with each attempt to the belief that a governmental educational system must, in order to be successful, take cognizance of the demands within the industries for workmen of various kinds and must educate, in such a way as to supply these demands, the children who come to it for instruction. If this were done, slowly but surely as the supply was provided, the unions would become more and more kindly disposed to the system and would come in time to accept its products. The realization would be forced that this output could powerfully strengthen the

unions themselves in their endeavors to make the world a happier place in which to live.

In all fairness, it must be borne in mind that the exploitation of the products of our schools, colleges, and universities by the industries, which take the form of such special courses given in manufacturing establishments as we have mentioned, is not a willful perversion. Exploitation has been forced by the failure of the system. It is reasonable to suppose that beneficial in a small way as these courses are, the industries would welcome any educational system which would make wholly unnecessary such specialized industrial training courses as are conducted by the industries at the present time. The advantages accruing to the manufacturers from securing men adequately equipped to assume at once a position of responsibility would, we believe, far outweigh any small monetary saving that is accomplished, at the present time, by a system, which constitutes, as it does, exploitation. The criticism of these courses lies certainly not at the doors of the industries, but goes back, as we have said before, to the formal system of education.

The Pittsburgh community is primarily a community with a particular industrial bent, and the Pittsburgh community needs a system of academic education which will not only render exploitation unnecessary, but will also actively apply sound

economic principles. And until this happens, this community, in common with other communities, will continue to remain the same disorderly, wasteful, and unwieldy monstrosity which it is at the present time.

CHAPTER XV

THE DEMANDS OF THE PITTSBURGH COMMUNITY

No gross analysis of the demands of the city of Pittsburgh has ever been made, much less an analysis of the demands of the Pittsburgh community. The latest census of manufactures of the metropolitan district, by specified industries, was tabulated, as we have said, in 1912 and was taken in 1909. And even the reliability of these figures published by the local Chamber of Commerce may admit of reasonable questioning.

The Chamber of Commerce, in its published report, made no attempt to designate other than demands in the large. For example, 102 individuals were listed as salaried employees in brass and bronze establishments, and 704 individuals were listed as wage-earners in the same concerns; 121 and 833 respectively in confectionery manufacturing plants; and so on throughout the long list of specified industries. Beyond this gross listing there has been, so far as we can ascertain, no analysis made of the diversified demands which even a manufacturing concern engaged in the production of confectionery would present to the educational system for supply.

The flux and change of the demands of the community have never been reckoned with, and undoubtedly these demands have been modified each year during the period following the taking of these statistics. And the industries must in many ways have been fronted with the necessity for training individuals in new tasks, of the existence of which no educational system has yet taken cognizance.

We have already pointed out that the Pittsburgh community, because of its bent, presents special demands for men skilled in vocational work. How large a proportion of the population is required to supply these particular demands is at present unknown, again because of the lack of statistics. But in such a community as this, this specialized demand must, perforce, be extremely large; perhaps ninety per cent of the total population would be a fair estimate.

We have further pointed out that the special demands of the Pittsburgh community are determined by the outstanding features of its industries. To-day and for generations to come, these features of the industries will undoubtedly be those presented because of the contents of the earth underlying the community. Furthermore, it is quite within reason to assume that the bent of this region will remain practically the same for many years, at least until change is necessitated by the exhaustion

of these resources which have given to the area its particular bent.

All communities in countries which have gained civilization present certain demands to the educational system for supply. The number of these demands increases or diminishes with the influx and outflow of population, but since they never quite disappear so long as the community persists, they may be designated as "staple." Every community presents staple demands for physicians, bankers, merchants, teachers, lawyers, ministers, etc., as well as for those who fill the earlier vocations. And while the movements of peoples exercise the major influences upon these staples, regional variances also have their effect. Even the staple demands are for a regionally educated product.

In addition to these staple demands common to all communities, there are in the community of Pittsburgh various other special demands determined almost entirely by the bent of the district. For example, the resources and industries of the region make especially large demands for men trained in chemistry, physics, electricity, and biology: for men trained to care for the health and welfare of those who work in and develop the industries as well as for those trained to attack the various legal problems which a congregation of people with special industrial interests presents. Of course, this is only

a rough general statement, yet the truth of it should be evident to any one conversant with the characteristics of the Pittsburgh district.

It now becomes necessary for us to select from among the late vocations those which are most pressingly demanded by the Pittsburgh community, because of the character of its particular bent, and to weigh each, that we may determine which are worthy of attention by the University, and which are important enough to monopolize that attention. And here it may be said, should the classification seem arbitrary, that judgment has been formed only after long residence and more than two years of intensive study. Nor has the fact been forgotten that the designation of any one field as more important than another ever offers, to those fond of arguments, an attractive opportunity for criticism. Be that as it may, without in the least wishing to engage in any discussion concerning the relative importance of the various late vocations, we believe, since the progress of any community depends, in the end, upon the health and well-being of those who form it, that still it can be said, in all truth, that one of the first duties of a university is to furnish an education for late vocationalists interested in the promotion of human welfare, and primarily in the furtherance of public health.

In any large community, and particularly in the

community of Pittsburgh, a school of medicine, of the first rank, is an essential. More than this, and in line with the basic principles underlying our proposal, we believe that a school of medicine, to function properly, must hold as its ideal service for human welfare in its broadest conception. This conception means that our medical schools should do more than provide a large number of special practitioners such as we may call, for the time being, "visualizers." They should produce specialized groups — special practitioners in the art of medicine, specialized surgeons, specialized internalists, specialized laboratory workers and inspectors. And furthermore, and of vital importance, they should modify their characters in accordance with the suggestion made by the Carnegie Foundation; that is, each school of medicine should build its character on the peculiar opportunities opened to it by the nature of the area which surrounds it, or, in other words, each school should give the proper amount of consideration to regional variances and community bents.

Tulane University of Louisiana, by placing major emphasis upon the study of tropical diseases, has already embarked upon such a course, as has the Johns Hopkins Medical School in focusing upon the provision of teachers in medicine. We are just at the beginning of this movement, the growth and development of which we believe to be inevitable —

not only inevitable but also desirable. These changes which we are witnessing are in reality but the application in this special, late-vocational field of those principles which we advocate applying in every field of education. This being the case, it becomes necessary to consider the peculiar character which the regional variance and bent of the Pittsburgh community demand that its medical equipment, particularly the Medical School of the University of Pittsburgh, should assume. And here, to be brief, we believe that adequate attention to the bent of the local community can be given by the Medical School of the University only by focusing upon that portion of the human-welfare problem presented by the occupational diseases attendant upon industries.

We would suggest, therefore, that the Medical Department of the University of Pittsburgh accept, as its community-given privilege and duty, the study of occupational diseases; and that, in addition to this, as an accessory feature of the Medical Department, it emphasize development of medical and nursing agents trained in a social sense.

Sickness in the broadest sense of the term always invades such territories as are permeated by organizations for the study of wage conditions, housing conditions, internal conditions, and the incorporation of the foreign-born in the populace. And as a result there has come in modern times this demand

for doctors and nurses possessing the social sense. This demand, while of comparatively recent origin, has nevertheless developed with extreme rapidity. As has so often happened before in emergencies, voluntary agents have here accepted and taken up the task of producing individuals so trained. Because of this, and because our medical schools have quite neglected the field, the mass of such agents thus produced has been woefully lacking in the knowledge requisite for the satisfactory handling of public-health problems. Quite fittingly, therefore, the School of Medicine in the University of Pittsburgh, in addition to producing various practitioners and research workers in the general field, might, in order to render the maximum service to the community, add the training that would inculcate in the minds of its students knowledge of the great social problems with which they, as practitioners, will be required to deal.

Most certainly, above all else, the health and welfare of a community should be provided for, and adequate provision can be made only by placing the proper amount of emphasis upon the proper kind of medical and nursing instruction. To summarize, then, the demands of the Pittsburgh community in the field of medicine are for a university medical school with a definite bent; namely, for one which shall devote the larger part of its attention to the

study, prevention, and relief of occupational diseases, and at the same time for one which shall, in addition to giving its graduates special training in these diseases, give them such instruction as will produce that social sense without which their work can count little for community progress.

Human welfare and public health, however, are not alone promoted by our departments of medicine. Associated with the contribution which these departments may make, there is always the contribution which must be made by departments of law. Exactly the same analysis applies in law as has been applied in medicine. The production of those properly trained in jurisprudence is of extreme importance in a community with special industrial features.

The community of Pittsburgh requires as a matter of course numbers of general legal practitioners. But in addition to this and more to the point, it requires lawyers of peculiar instruction for every field of special work created by the special bent of the community. It has a need for lawyers with a knowledge of the problems associated with the rights of industries to the contents of the earth underlying the community. It requires practitioners instructed in the affording of protection to the inventions which are constantly born in an industrial community. It requires those trained by special instruction

in patent law. As a matter of fact, the demands which the Pittsburgh community makes upon the legal field are almost as diversified as those which it makes in the medical. And furthermore, even in such a special province as that of patent law, it demands those who understand the problems presented by new discoveries made by research in chemistry, physics, electricity, and biology.

Possibly of equal importance with the demands which the Pittsburgh community makes for men trained in that phase of law which concerns itself with scientific research and its products are the demands which it makes for those trained in other phases of legal education which have to do with wages, with the relations of organized labor to the industries, the relations of imported foreign populaces to their home country and to the Federal Government, with the peculiar problems of living presented by the incorporation of the foreign-born, with the protection of all immigrants from malpractitioners who make capital out of the newcomer's lack of knowledge of conditions into which he has been imported. These and many more form a host of special problems, each of which presents its demands to a legal research division in the organized department of law. Up to the present time no adequate equipment has been provided in Pittsburgh to furnish a supply for such demands. The

School of Law in the University which now attempts to do this is little more than a low-rate institution. Yet surely the provision of a supply of legally trained specialists is a task worthy of the attention of the University.

In addition to these special demands for men trained in medicine and law, the Pittsburgh community presents still others of supreme importance. These demands come largely from the industries and are for higher vocationalists trained in those sciences upon which the progress of the industries themselves depends. The bent of the Pittsburgh community forces these demands for those possessing knowledge first of chemistry, then of physics, then of electricity, and of biology. And basing these requirements in the sciences there is the ever-increasing demand for research and for research workers in the scientific and industrial fields. In fact, so pronounced is the bent of the region that these demands may be fittingly termed "Pittsburgh staples."

Here we come at once to that great opportunity which peculiarly belongs to the University. The establishment of the Mellon Institute and School of Specific Industries marked a long step in progress in this direction. As a result, what is needed now is not so much physical equipment as the spirit of research — that spirit which should permeate any institution founded with research for its primary

purpose, that spirit which should insist that such an institution project the highest ideals in chemistry and yet be not prodigal of its own rights and resources. This spirit, were it fostered in the Pittsburgh community equipped as it is with the Mellon Institute, would insist that there should be made from the industries a return to the institution of funds to be utilized in pushing still farther into unknown fields. And in this respect it may be said that what is applicable to chemistry applies equally in physics, in electricity, and in biology. Biology to-day is after all but a department of chemistry, and who at the present time is able to place any limitation upon its province? It invades all departments of human study.

The analysis which we have suggested, while having its greatest bearing upon the early vocationalists or skilled laboring vocationalists, would have a most significant local application in the chemical field. One need only be mildly sensitive to industrial and scientific requirements to know that the most vital factor in the future of coal and oil and their by-products, in iron, in steel, and in gas, lies within the chemical room of each industrial plant. Industries have been slow to accept the innovation, but with the increasing knowledge of its necessity, the enthusiasm has now become so pronounced that the demand for chemists has enormously increased. The

industries are recognizing that analysis of deficiencies, synthesis for better products, and experimentation are most necessary to sustain industrial life.

An examination of the chemical literature reveals how sound this judgment of the industries is. Today we approach life through general and physical chemistry, radioactivity, electrochemistry, inorganic chemistry, analytical, chemistry mineralogical and geological chemistry, metallurgy and metallography, organic chemistry, biological chemistry, foods, water, sewage and sanitation, soils and fertilizers, fermented and distilled liquors, pharmaceutical chemistry, acids, alkalies, salts and sundries, glass and ceramics, cement and other building materials, fuels, gas, tar and coke, petroleum, asphalt and wood products, cellulose and paper, explosives and explosions, dyes and textile chemistry, paints, varnishes and resins, fats, fatty oils and soaps, sugar, starch and gums, rubber and allied substances. It will be noted that over fifty per cent of these subjects for chemical research are necessary in the sustaining of industrial life.

The community which is not alive, through both its academic and industrial branches of its educational system, to the demands that are yearly being created by research, cannot hope to compete with other communities of like size. From every angle by which we have approached the local educational

system we have come ultimately to this conclusion, that Pittsburgh has failed to father the research that must precede progress. Its industries have progressed, it is true, but the expert chemists who have contributed to this progress have been, in large part, imported into the Pittsburgh community.

For men trained in medicine, in law, and in chemistry, then, the Pittsburgh community makes its most urgent demands. In the provision of a supply to meet such demands reside the greatest opportunities for the University.

That we have not made special mention of either mining, dentistry, or the domestic vocations may seem an unpardonable oversight. The reason for this omission, however, is that we believe the supplying of demands in these vocations to be of secondary importance; the task relegated to that position by the bent of the community and by the equipment which already exists in the district for the production of the supply. The demands in mining, for instance, are well cared for by the Carnegie Institute of Technology—in fact, far better cared for than the University can ever hope to provide for them, with the other greater problems demanding attention. The Carnegie Institute, with its equipment and now with its neighboring Federal Bureau of Mines, can be trusted to supply demands in this particular field. It would be fitting for the University to leave

this work solely to these institutions. Dentistry may be looked upon as a department necessarily incorporated with a department of public welfare and included with the departments of medicine, nursing, and pharmacy. The training of students for the various domestic vocations as for mining and engineering should, we believe, be left to the Carnegie Institute of Technology already far more adequately equipped than the University for this work.

The furnishing of a supply to meet the agricultural demands of the Pittsburgh community might well be the task of such institutions of special agricultural bent as would exist within the boundaries of the proposed university unit were those lines drawn.

The great demand for administrators which is made by the Pittsburgh community and which has not been heretofore dealt with is entitled to special consideration. The outstanding obstacle in the way of providing administrators is the breadth of the field. The administrative vocational field is as broad as the whole field of education itself. Special equipment for each special administrative position has become a part of the modern requirements. Because of this, we do not feel competent to dictate even in mildly dogmatic terms what should be done with the problem, but it seems plausible that the training

of business administrators can best be accomplished by making a thorough canvass of the practitioners and by allowing those most efficient in various administrative capacities to assist in the delineation of courses. Surely the practitioners of efficient business administration are, like the practitioners in the other late vocations, best fitted materially to assist in such a delineation. The determination of both requisites and electives, here as elsewhere, we believe, should be made by a majority vote of the practitioners. Also it would seem that, in the reconstruction of the educational system of any community, a special department for the presentation of subjects common to all administrative work would be a necessary correlative of each department.

In many of our large industries the administrators have come up from the ranks of the technicians and the early vocationalists. Promotion has been merited by the peculiar ability for administration and leadership which the individuals have displayed. Those who take modern courses of business administration often fail and are shifted into other departments because of their lack of technical knowledge required to accomplish the task which they have undertaken. Some there are who even go so far as to maintain that administrators are born, not made. In part this may be true. The administrative faculty may be to some extent inherent, but it must

also be true that education can be of service in developing and training that faculty. Indeed, the problem is a complex one. And yet we believe that the day has come to make a beginning at a delineation of courses by analysis, to cull information from those who are prominent in the various administrative fields, and to build our highway, which the feet of those who elect an administrative ultimate must follow, out of the material which those who have passed before can furnish.

In the chapter dealing with delineation of courses, we have already endeavored to show that with this proposal there is no minimizing of the difficulties which would be encountered because successful men have not been asked to think in terms of educational equipment. But here again, let it be said that we still believe that were this process begun, it would not be long until men began to think in such terms. The practitioner has had little to say concerning the training of his voice, but if given the opportunity and urged to do so, it is quite within reason to believe that he would soon welcome the opportunity to raise that voice both in defense and in condemnation of certain methods of training.

It will be readily seen that we believe the opportunity presented to the University of Pittsburgh by the demands of the Pittsburgh community is, first, to choose those departments which are of distinctly

university character and which bulk largest in the demands, and devote its attention to these; second, in the broadest spirit, to allow for, and further, the development of those institutions of peculiar character which fulfill the function and provide for rare demands; and third, to exert all its endeavors to correlate, to avoid duplication, waste, and needless competition.

The equipment which exists in the Pittsburgh metropolitan district for the supplying of men trained to meet such special late-vocational demands as we have mentioned is far from adequate. The Mellon Institute in which industrial research is carried on was not founded primarily to train chemists for broad fields of work, but was instituted rather to aid the industries to become more efficient by utilizing waste and perfecting products and by-products. The Department of Chemistry in the University of Pittsburgh has from its inception been struggling against many odds. The lack of equipment, the lack of space, in many instances the lack of properly trained men, the latter lack the direct result of small salaries, have all operated against the growth of this department which should be one of the most serviceable and powerful in the institution. The departments of chemistry maintained by other institutions in the district, regardless of how well organized they may be, exhibit no evidence

that the proper amount of emphasis has been placed upon this branch of education.

What is true in the case of chemistry is equally true in the case of physics and the biological sciences. In other words, nowhere in the Pittsburgh metropolitan district is there a department of chemistry, biology, or physics outstanding enough to be known to the members of the community or to a wider circle. If we allow our minds to travel to the city of Baltimore, what we are endeavoring to present will at once be clear. The moment Baltimore is mentioned, the work of Johns Hopkins University in the field of medicine comes to mind. The demands of Pittsburgh are of such a character that were these demands adequately supplied by local equipment, the mention of Pittsburgh would immediately suggest the opportunities open here for the study of chemistry and these other sciences.

Pittsburgh may mean to the world steel, iron, coal, coke, oil, and gas, but the world recks not of the Pittsburgh educational equipment. This equipment should, however, mean to the world chemistry, physics, biological sciences and law in the gross. It should mean a community educational system based upon an analysis of the demands and the individual ultimates: a departmentalized educational system by means of which waste has been eliminated: a benign circle working, through a municipal founda-

tion for the study and advancement of community education, to the industries through its bureaus of analysis, statistics, and supply: a source of information and therefore a source of power to the Federal Government. If this could be accomplished, in a city possessing such great potentialities, the fame of Pittsburgh's educational system would be as widespread and as merited as is the fame of its industrial accomplishments.

CHAPTER XVI

THE OPPORTUNITY FOR THE UNIVERSITY

In the preceding chapters of this volume we have attempted to indicate a simple plan for applying the fundamental principles of economy to the educational system. We have endeavored to show that such an application would result in a departmentalization of the entire system, and in a delineation of courses running throughout it based upon an analysis of ultimates with a due regard for the laws of supply and demand, and the bent of the given community. We have suggested further that the proper agents to employ in such an endeavor would be municipal foundations for the study and advancement of community education. We have raised the questions as to where the work of such foundations should begin and where such institutions should reside, and have briefly answered them with the assertion that the most fitting, and perhaps the only reasonable, place of residence for activities so large and so purposeful for service should be in the highest, or what should be the highest, educational institutions in the communities, namely, the universities. We have offered as a reason for this assertion the fact that it is from these parts of our educational

equipment that those who have elected the latest ultimates in the demands of the community pass out of the formal educational system. For this reason, if for no other, our universities should be the abiding-place of those institutions engaged in that research which must precede all important advance made by the community as a whole. Within these should be developed new alignments, proved feasible by research. From these should radiate a spirit of kindness and helpfulness and information pointing the way to the soundest line of progressive evolution for the race.

In the present chapter we will endeavor, so far as is possible, to sketch some of the effects which the application of these principles of economics would have were this application made to the University of Pittsburgh, and, at the same time, consider some of the opportunities which the furthering of such a plan would open to that institution. It is, of course, inconceivable that the University of Pittsburgh or any other single university can educate for the world. On the other hand, it is quite conceivable that the University of Pittsburgh can educate the world by educating for its own community.

The examination of the conditions in the local university made by the survey organization revealed how inadequately is that institution functioning at

the present time. To summarize in this regard, let us begin with that portion of equipment dedicated to the fitting of those entering late vocations. Here the Graduate School, far more formidable in the printed catalogue than in reality, is able to keep alive only with the utmost difficulty. The introduction into this field of an industrial department in graduate work has so perplexed the cultural group that, up to the present, they have been quite unable to establish any sound working basis upon which to build a graduate entity. More than this, the various schools feeding the graduate body are so dissociated that an individual, majoring in one subject, and calling for advice and guidance in the work which he must follow, finds himself tossed back and forth between these uncorrelated and competing groups.

Proceeding to the next group of so-called "schools" within the University, Medicine, Law, Dentistry, and now struggling to enter, the School of Pharmacy, we find the same lack of coördination. The survey, in its process of analysis here, made a tabulation of the subjects taught within these schools. This tabulation revealed, in the first instance, gross extravagances: to wit, nearly all the subjects taught in the primary years of medicine, for example, are taught as well in the primary years of dentistry. Histology, physiology, pathology, chemistry, and others are duplicated. In pharmacy,

we find again duplication in therapeutics, pharmacology, physiology, and chemistry. In fact, everywhere, duplication, lack of coördination and extravagance were in evidence: extravagance that could find no argument for its warrant save that of ease of administration as long as the University flounders under its present form of organization.

By pressing still farther in our analysis to those schools which stand between the semi-graduate and secondary schools of the local institutions, we arrive at the conclusion that here attempts at departmentalization have proceeded farthest. Here conditions within the University may be considered typical, in the main, of those which obtain elsewhere. In the University of Pittsburgh we have five so-called "undergraduate" schools — the College, the School of Education, the School of Economics, the School of Mines, and the School of Chemistry. These schools are interdependent, yet each, in varying degrees, duplicates the work of others. Each is filled with suspicion and fear lest another encroach in some way upon its own particular territory. The College feeds all. For instance, in a meager department of biology this school attempts to provide courses demanded by all the remaining undergraduate schools as well as those courses of special type demanded by the higher schools, and those leading through to post-graduate fields of endeavor.

Quite apart from the effects which this lack of correlation, with its attendant duplication and wastefulness, has upon the budget are its effects upon legislation and progress. This is an aspect which cannot remain unmentioned. No advances can be made in these undergraduate schools without proposals going through the hands of a group of administrators in the school body, then through a group of University administrators, then through a board of trustees. Proposals for changes must follow this course. Truly the legislative way is a long and devious one, but the evil ends not here. It is as inequitable as it is cumbersome, for the legislation is at the mercy, first, of a biased, partisan group, second, of a jealous, dissociated group, and third, of a preoccupied, largely uninterested group.

However, it is not our purpose here to indulge in criticisms. It is rather to call attention to the opportunities open to the University of Pittsburgh. Were departmentalization, such as has been suggested, a reality at the present time rather than a suggestion, many of the difficulties which have arisen because of the dissociated organization of the institution would be non-existent. Also with departmentalization, that motley group which to-day we call "schools," each competing with the other, duplicating equipment and creating immeasurable waste, would be coördinated and the wastage and duplica-

tion prevented. In the graduate department alone, the accomplishment of departmentalization and reorganization, regardless of the amount of time required to extend the departmentalization through to the primary schools of the city and of the community, would bring advantages well worth all the expenditure of effort which might be demanded in the endeavor.

By referring to the chart at page 137, we shall see that each subject of sufficient importance would form a department for the whole community and that this department would have its administrative head in the highest educational field. Under such a system the student entering at the bottom would find his emergence facilitated by the autonomy allowed within each department. Once such a student had placed himself in the hands of student guides, possibly under the general direction of the University Registrar, his way would be made easy, at least to the extent that he would not be forced to cope with the unnecessary interference of the present system. He would become a student of an educational system able to project him into a community adequately fitted to undertake his work in life and qualified to assume his communal responsibilities. Not only would the difficulties at present arising between the graduate and late-vocational or professional schools, as they are now called, fall away

by departmentalization, but the extravagance caused by duplication here would also disappear. In the semi-graduate schools, if departmentalization were a reality, this prodigality and duplication would again be obviated. Those arguments, born of jealousy and suspicion, which waste so much of the time and thought of the present administrators and by so doing frustrate constructive legislation, would be abruptly closed. The time which is now spent in wrangling over school encroachments and *school progress* would be devoted to furthering the interests of the student by clearly defining a course for his pursuance from his entrance to his graduation which would fit him to undertake his chosen task.

Were the municipal foundation for the study and advancement of community education a reality and actually in residence at the University of Pittsburgh its early course in the local field would be clear. One of its first tasks would be to stop such duplications as already exist as a result of the present faulty system of administration. Such a work, because of the hold which the establishment of so-called "schools" has obtained, would devolve upon the foundation as an imperative duty. The duplication already discovered in the course of this investigation and the further plans for duplication of departments which are known to be imminent are among

the most serious menaces to the development of the local University as a whole and to the development of any adequate educational system for the community. And herein lies one great opportunity for the University to place itself upon a sound basis of business efficiency first, and by so doing become in its administrative departments a model of business administration, that it may be able to command the respect of well-conducted industrial organizations.

No institution which fails to apply the soundest principles of organization can hope to command the respect or greatly further the interests of a community which demands, among other things, administrators trained in the principles of scientific administration and organization. Slipshod and slovenly methods of administration, congested and disorderly offices, and obvious evidences of waste and duplication may not greatly hinder the development of a training school for clerks, provided the taxpaying community can be kept in ignorance of how great are the discrepancies between the theories taught and the practices followed. But how much more powerful would such a school become were the principles which the student must, in order to achieve success, apply to that work for which he is being trained, applied within the walls of the school itself: that is to say, were the school placed on a sound economic and efficient administrative basis. Surely if the

function of the university is to educate, it must lead rather than follow, and it can only lead by preaching the best and by following its preachments. It must, in its organization, present to the community a model to which all members of the community interested in organization can turn for suggestion and guidance.

Let us now consider for a moment the secondary schools which feed these schools of the University. Here the largest excretion of our populace takes place and here, during the past few years, the reorganizers have concerned themselves largely with that proportion of the student body which is so excreted. In an early chapter we have already dwelt somewhat at length upon this trend and the greater attention which has been given to the furthering of the interests of those forced by circumstances or inclination into training for an early vocation, entrance to which must be made through the secondary schools. This increased consideration given by these schools to vocational guidance, however inadequately they may have coped with the problem, has unquestionably been proper. On the other hand, it is equally true that an important part of the duty of a secondary school, perhaps the highest duty it has to perform, is to hold to the same provision for the smaller percentage — those who desire to reach higher fields of learning; in other words, to facilitate the emergence of this ambitious and more fortunate

smaller percentage. The old, absolute, pre-professional ideal for the secondary schools was certainly productive of evil. A new, absolute, vocational idea would be equally disastrous. Both early vocational and pre-late vocational ultimates must be reckoned with.

Another fact is outstanding One need only glance at the reports of the State Departments of Education throughout the country, or more particularly, for present purposes, the report of the Department of Education of the Commonwealth of Pennsylvania, to realize how numerous are the discrepancies existing between the best and the poorest of the secondary schools. And yet the University group of undergraduate schools, despite this, is compelled to accept, or rather from choice does accept, largely without discrimination, the output from all the secondary schools no matter how poor in grade they be. At times, it is true, discriminations have been made against graduates of certain common schools, but an examination of the records in the office of the Registrar of the University showed that such were rare occurrences. Despite this fact, many of the secondary schools are distressed if the University attempts to raise its standards, and the University, at times, complains of the slowness with which the secondary schools meet the demands of higher standards.

Here, once more, were departmentalization applied throughout the educational system, such discrepancies existing in high schools and such dissensions between these schools and the higher institutions, into which they feed that smaller proportion of their products, would also disappear. And with the passing of these would go the waste which accompanies the attempts of teachers to make the training presented in schools blanket entire incoming groups — groups which include among their members those trained in the best schools and those trained in the poorest. Courses not adapted to individual students would not be compulsorily forced upon a student, for his lack of receptors for these particular courses would have been discovered earlier and shortly after his entrance into those departments.

At the risk of becoming monotonous by repetition, let it again be said that a delineation of courses and departmentalization, if attempted even in the graduate schools and higher parts of our educational equipment, could not cease before it reached the very foundation of the entire system. The plan is, after all, but the application of the principles of modern organization and human economy to the educational system and is based upon economic laws of supply and demand.

The opportunities open to the University of Pitts-

burgh, were it to undertake such a venture, we are convinced, would, because of the opportunity for the broadest service, first, to the community itself and, second, to the Nation, be greater than those possessed by any other institution of learning in this country. Any success obtained would accrue not alone to the institution, for in proportion as was the institution benefited, in like proportion would benefits accrue to the community and to the Nation. The Pittsburgh University unit is, we believe, the largest single area east of the Mississippi still unsupplied with an adequate equipment for higher education. The demands of metropolitan Pittsburgh alone in the special fields mentioned would be sufficient, we believe, to furnish work for a powerful university.

What greater opportunities could be desired for any university than these open to the University of Pittsburgh — opportunities to further the welfare of all the members of the community; to increase, by assisting all rather than a few, the sum total of human happiness within the borders of its unit; to undertake intelligently and sympathetically, first, the task of discovering how it can be of service, and second, how it can, through its own endeavors, build its foundation on the specific needs existing in the district which it purposes primarily to serve!

CHAPTER XVII

GENERAL RECOMMENDATIONS

In concluding, the survey organization made the following general recommendations: —

First: That a group of men, interested in furthering the welfare of the Pittsburgh community, take upon themselves the duty of establishing a municipal foundation for the study and advancement of community education.

Second: That, if possible, this foundation be placed in residence at the University of Pittsburgh.

Third: That funds, adequate for beginning the work of making an analysis of the demands of the community, be provided.

Fourth: That simultaneously with this analysis, a careful study of the present supply be made.

Fifth: That the results of these studies be tabulated and published for the enlightenment of the community.

Sixth: That a further analysis be made of the requisites of ultimates present in the demands, and that the results of this analysis be made public, in order that proper assistance may be given all educational institutions operating within the area, to

delineate courses which shall best fit for the ultimates existing in the demand.

Seventh: That a study be made to delineate additional courses which are beneficial, in order that these may be grouped in such a way as to be advantageously elected.

Eighth: That the foundation begin its work of departmentalization within the University itself, changing the present university organization and placing it upon a departmentalized basis as rapidly as can be accomplished without revolution and injury.

Ninth: That through results obtained by departmentalization here, the University endeavor to extend its departments through the secondary and primary schools.

Tenth: That all effort be exerted to bring about a thorough departmentalization with the establishment ultimately of a board of departments and the application of a democratic representative form of government to the educational system of the unit.

Eleventh: That the foundation through its knowledge gained develop a policy not only for the University, but also for the entire system, which shall have for its primary consideration the supplying of the demands made by the bent of the community.

Twelfth: That existing educational organizations be left as they are at the present time until sufficient

knowledge has been gained by the foundation intelligently to begin the work of realignment.

Thirteenth: That every effort be put forth to secure the coöperation, not only of the local board of education, but of all organizations and bodies which have for their function the furthering of the interests of the community, especially the Carnegie Institute of Technology.

Finally, the survey urges the making of a beginning, no matter how small that beginning be. Such a beginning would not partake of the nature of an experiment, for the principles upon which the work of a municipal foundation for the study and advancement of community education would be based have been tested in other fields of endeavor and found to be sound. The survey organization is not minimizing the obstacles which would of necessity be encountered. But it believes that, by steadily pursuing the course outlined, such difficulties would, one after another, be worn away, and that, in the course of time, with the increasing success of the foundation, the Pittsburgh community would come to regard its educational equipment as its most valuable asset. Furthermore, each part of this equipment would command the highest respect of all the members of the community, not primarily because of its power, but rather because of the service which it would render.

Provision for the health and welfare of the community is but a small part of the programme which such a foundation would endeavor to carry out. Yet a community that provides itself with agents possessing a social sense and trained to care for the health and welfare of its populace, and in addition provides preventive measures in the midst of peculiar industrial conditions, will, by virtue of these provisions alone, be the great community of the future. We believe, furthermore, that in each community, were this example set by Pittsburgh, there would ultimately appear a group of men of single purpose whose intention would be to further the interests of their own community in the same way: a group which would recognize the fact that the only foundation for an educational system of the community is one which will stand any amount of superstructure and, while fixed in principle, be yet capable of expanding and retracting upon requirement. The time will certainly come whenever such a group sees that the principles working through the vocational group are those which apply throughout the professional group as well, and that the line of demarkation between professional and non-professional is, so far as fundamental principles are concerned, an indistinguishable one. Surely there resides in each community a group of men capable of undertaking such a project and willing to embrace

such an opportunity for service. It only remains for one community to set the example and to prove by the results obtained the feasibility of the plan.

We have already said, and let it be here reiterated, that the community of Pittsburgh, because of its almost unlimited resources, offers many advantages — possibly more advantages than does many another community — for the projection of such a plan. Regardless, however, of which community first makes the endeavor, that community which does will in a short time be far in the lead of any others which may come to embrace a similar opportunity later when the advantages become more widely known. The road to complete success in any community would, of necessity, be a long one, but the distance to be traveled, in view of the immediate beneficial results which would be obtained, should not deter from the undertaking of the journey.

BIBLIOGRAPHY

1. Baumann, Arthur Anthony. *Persons and Politics of the Transition.* Macmillan, London, 1916. xiv, 281 pp.
2. Beckwith, Holmes. *German Industrial Education and its Lessons for the United States.* Bureau of Education, Bulletin, 1913, no. 19. 154 pp.
3. Bloomfield, Meyer. *Youth, School, and Vocation.* Houghton Mifflin Company, Boston, 1915. xi, 273 pp.
4. Bourne, Randolph, F. *The Gary Schools.* Houghton Mifflin Company, Boston, 1916. 204 pp.
5. Brown, W. J. *Underlying Principles of Modern Legislation.* E. P. Dutton, New York, 1915. 319 pp.
6. *Bulletins.* American Association of University Professors. Vol. 1, part 1, December, 1916. 42 pp.
7. ——— *Education of the Immigrant.* Bureau of Education, Bulletin, 1913, no. 31. 52 pp.
8. ——— *Expressions on Education.* Bureau of Education, Bulletin, 1913, no. 28. 39 pp.
9. ——— *Reorganization of Secondary Education.* Bureau of Education, Bulletin, 1913, no. 41. 80 pp.
10. Carnegie Foundation for the Advancement of Teaching. *Rules for the Admission of Institutions and for the Granting of Retiring Allowances.* New York, 1913. 10 pp.
11. ——— *Eighth Annual Report.* New York, 1913. vi, 124 pp.
12. ——— *Ninth Annual Report.* New York, 1914. 154 pp.
13. ——— *Education in Vermont.* Bulletin, no. 7, 1914, New York. 241 pp.
14. Cattell, J. McKeen. *ed. University Control.* The Science Press, New York and Garrison, New York, 1913. viii, 482 pp.
15. Cheyney, Edward P. "Trustees and Faculty." *School and Society,* vol. 2, no. 49, December 4, 1915, pp. 793–806.
16. Cole, C. D. H. *The World of Labor. A Discussion of the Present and Future of Trade-Unionism.* G. Bell & Sons, Ltd., London, 1913. 452 pp.

17. Cubberley, Ellwood P. *Public School Administration.* Houghton Mifflin Company, Boston, 1916. xviii, 479 pp.
18. ——— *State and County Educational Reorganization.* Macmillan, New York, 1914. xx, 257 pp.
19. Dawson, William Harbutt. *Municipal Life and Government in Germany.* Longmans, 1914. 524 pp.
20. DeGobineau, Arthur. *The Inequality of Human Races.* William Heinemann, London. 233 pp.
21. Dewey, John. *Democracy and Education.* Macmillan, New York, 1916. xii, 434 pp.
22. Eliot, Charles W. *University Administration.* Houghton Mifflin Co., Boston, 1908. 266 pp.
23. "Establishment of a School of Hygiene and Public Health by the Rockefeller Foundation." *Science,* vol. XLIII, no. 1121, pp. 889–90.
24. Fife, R. H. *The German Empire Between Two Wars.* Macmillan, New York. Chapter XVI, "The Rule of Cities."
25. Foght, Harold W. *The Educational System of Rural Denmark.* Bureau of Education, Bulletin, 1913, no. 58. 46 pp.
26. Froebel, Frederick. *Education of Man.* D. Appleton & Co., New York, 1894. xxv, 332 pp.
27. Garner, James Wilford. *Introduction to Political Science. A Treatise on the Origin, Nature, Functions, and Organization of the State.* American Book Company, New York, 1910.
28. Godfrey, Hollis. *The Institutional Budget.* Department of the Interior, Bureau of Education, Washington, D.C., April, 1916. 16 pp.
29. Hadley, Arthur T. *Undercurrents in American Politics.* Yale University Press, New Haven, Conn. 185 pp.
30. Harrison, Elizabeth. *The Montessori Method and the Kindergarten.* Bureau of Education, Bulletin, 1914, no. 28.
31. Holcombe, Arthur N. *State Government in the United States.* Macmillan, New York, 1916. xiii, 498 pp.
32. Hollister, Horace A. *The Administration of Education in a Democracy.* Charles Scribner's Sons, New York, 1914. 383 pp.
33. Hughes, R. E. *The Making of Citizens. A Study in Comparative Education.* Charles Scribner's Sons, New York, 1915.

34. Jones, George Ellis. *Training in Education.* University of Pittsburgh, Bulletin, vol. XII, no. 17, 1916. 113 pp.
35. Kerschensteiner, Georg. *Education for Citizenship.* Rand McNally & Co., Chicago, 1911. 133 pp.
36. ——— *A Comparison of Public Education in Germany and in the United States.* Bureau of Education, Bulletin, 1913, no. 24. 15 pp.
37. Kingsley, Clarence D. *College Entrance Requirements.* Bureau of Education, Bulletin, 1913, no. 7. 110 pp.
38. Lyle, W. T. *Economy in the Use of Class Rooms at Lafayette College.* Bulletin of the Society for the Promotion of Engineering Education, vol. VI, no. 5, Lancaster, Pa., January, 1916, pp. 315–25.
39. *Economy in the Use of Class Rooms at Lafayette College, Discussion on.* Bulletin of the Society for the Promotion of Engineering Education, vol. VI, no. 5, Lancaster, Pa., January, 1916, pp. 346–48.
40. Macy, Jesse, and Gannaway, John W. *Comparative Free Government.* Macmillan, New York, 1915. xviii, 754 pp.
41. Mann, C. R. *Comparative Study of Carnegie Institute of Technology and the University of Pittsburgh.* Report. Unpublished. 31 pp.
42. McCann, Mathew B. *The Fitchburg Plan of Coöperative Industrial Education.* Bureau of Education, Bulletin, 1913, whole no. 561. 28 pp.
43. Owen, William Baxter. *The Humanities in the Education of the Future.* Sherman French & Co., Boston, 1912. 187 pp.
44. Parker. *Methods of Teaching in High Schools.* Ginn & Company, Boston, 1915. xxv, 529 pp.
45. Perry, Arthur Clarence. *Modern Use of the School Plant.* Russell Sage Foundation, Survey Association, Inc., New York, 1915. xiii, 423 pp.
46. *Proceedings,* Association of American Medical Colleges, Twenty-fifth Annual Meeting, February 17, 1915. 116 pp.
47. *Proceedings,* Association of American Universities, Seventeenth Annual Conference. Published by the Association. 72 pp.
48. Quick, Robert Herbert. *Essays on Educational Reforms.* D. Appleton & Co., New York, 1896. xxxiv, 568 pp.

49. *Report*, Commissioner of Education, 1913, vol. I. Government Printing Office, Washington, D.C., 1914. liv, 931 pp.
50. ——— vol. II. Government Printing Office, Washington, D.C., 1914. vi, 700 pp.
51. ——— 1914, vol. I. Government Printing Office, Washington, D.C., 1915. xxxviii, 810 pp.
52. ——— 1915, vol. I. Government Printing Office, Washington, D.C., 1915. xx, 780 pp.
53. *Report of the Commissioners*, Royal Commission on Industrial Training and Technical Education, C. H. Parmelee, Ottawa, Ontario, Canada, 1913, parts I and II. xvi, 437 pp.
54. ——— part III, vol. I, XVII, pp. 443–1011.
55. ——— part III, vol. II, XXIV, pp. 1011–1633.
56. ——— part IV, XXV, pp. 1639–2354.
57. *Report, The President's*, 1915–16. Cornell University, Official Publications, vol. VII, no. 17, Ithaca, New York, September, 1916. 78 pp., pp. i–lxxxi.
58. Sanborn, Frank E. *The Task for Teachers*. Ohio State University Proof-Sheets, pp. 406–12.
59. Snedden, David. "The Achievements and Shortcomings of the American College." *The School Review*, vol. XVIII, no. 6, June, 1910, pp. 384–94.
60. ——— "The College Man and Current Problems." III. "The New Education," *Harvard Illustrated Magazine*, January, 1913, vol. XIV, no. 4, pp. 2–7.
61. ——— "Fundamental Distinctions Between Liberal and Vocational Education." *Proceedings*, National Educational Association, St. Paul, Minn., July, 1914, pp. 150–61.
62. ——— *Some Predictions as to the Future of Vocational Education*. Bulletin, National Society for the Promotion of Industrial Education, no. 22, January, 1916, pp. 1–20.
63. Snyder, Morton. "Schools a Target for Critics." *New York Times*, Sunday, September 24, 1916.
64. Stewart, A. E., and Simmonds, V. S. *Tuberculosis and Infant Welfare. An Intensive Study of Eight City Squares*. Tuberculosis League of Pittsburgh, Pittsburgh, 1916. 65 pp.

65. Stowell, Ellery C. *Diplomacy of the War of 1914. The Beginnings of the War.* Houghton Mifflin Company, Boston, 1915. xvii, 728 pp.

66. White, William Charles. *A Unit Plan for Large Municipalities.* Third Pennsylvania Conference of Tuberculosis Workers, Philadelphia, April 4, 1913. 3 pp.

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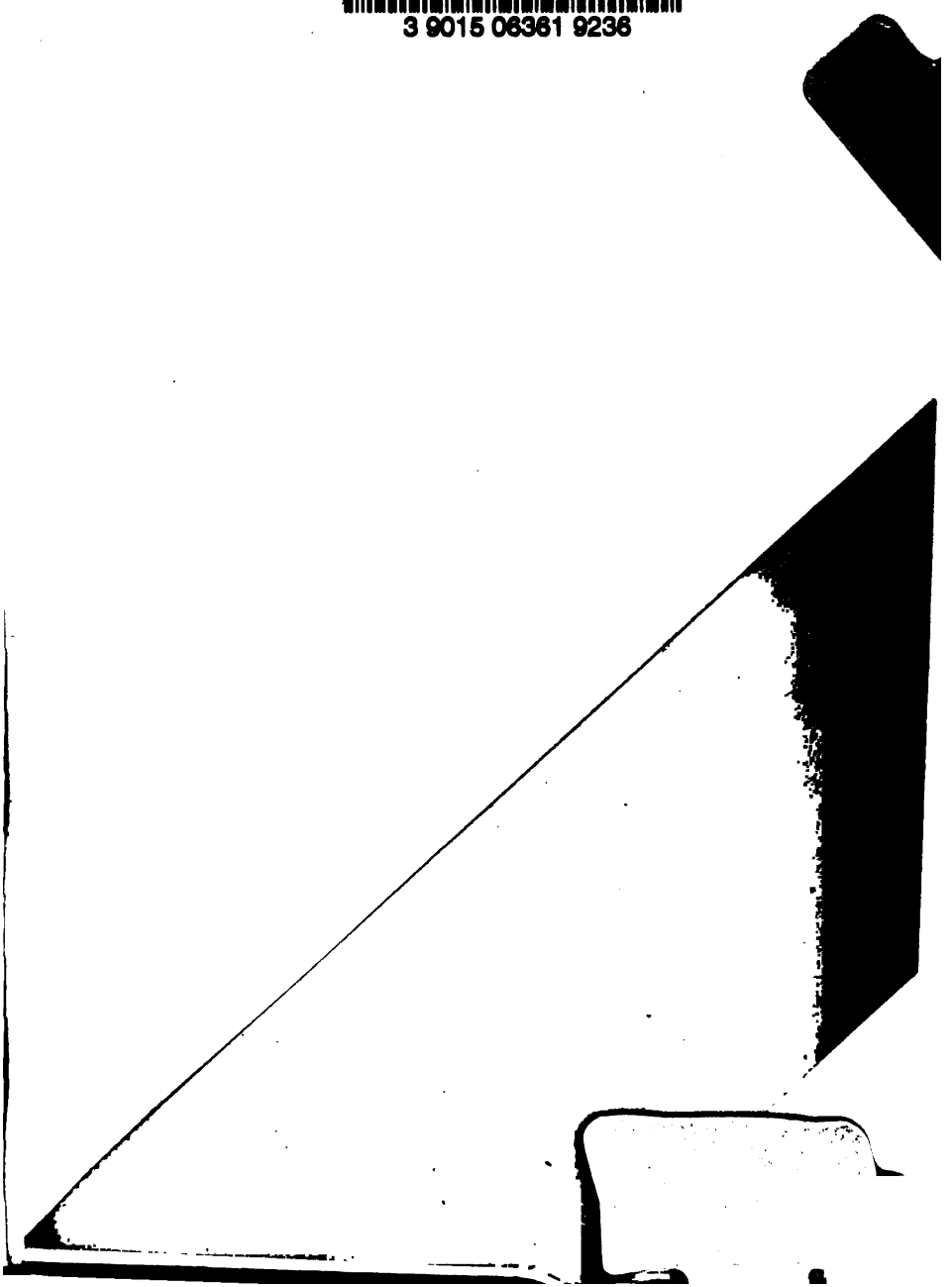

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